Reliance
Industries Limited
CIN # L17110MH1973PLC019786

Ref no.:697/28112023/HMD/MoEF&CC **Date: 28.11.2023**

Deputy Director General of Forests (C),
Ministry of Environment, Forest, and Climate Change,
Integrated Regional Office, GandhiNagar A wing- 407 & 409,
Aranya Bhawan, Near CH-3 Circle, Sector-10A, Gandhi Nagar-382010
Email: iro.gandhingr-mefcc@gov.in

Kind Attention: Inspector general of Forest/Scientist C

Subject: Six monthly compliance reports for RIL Hazira Manufacturing Division (HMD) for the period April '23 to Sep'23.

References:

1. No. J-11011/12/90-IA-II dated 31/01/1992
2. No. J-11011/32/2005- I(A) II - dated 30.06.2005.
3. SEIAA/GUJ/EC/5(e)/259/2011 dated 27.12.2011 and Amendment no. EIA-10-2010-698/1156 dated 06.11.2012
4. SEIAA / GUJ / EC / 1(d) & 7(e) / 3 / 2015 dated 28.01.2015 and its amendment SEIAA /GUJ / EC / 1(d) & 7(e) / 584 / 2016 dated 28.09.2016
5. No. J-1-1011/40/2015-IA-II(I) dated 10.07.2017
6. J-13012/5/2021-IA. I(T) dated 31st Oct 2022
7. J-11011/40/2015-IA II (I) dated 01st Nov 2022

Dear Sir,

Please find attached herewith the point wise compliance to the Environment Clearances granted to RIL Hazira Manufacturing Division by MoEF&CC and SEIAA, Gujarat (referenced above).

Each Environment Clearance in the attachment is followed by its respective Annexure for easy reference.

We hope that the above is in line with your requirements and request to kindly acknowledge the receipt.

Thanking you,

Yours truly,
For **RELIANCE INDUSTRIES LTD.**

Date

Shantanu Date
President

Encl.: As above

Reliance Industries Limited – Hazira Manufacturing Division

Compliance Status for the Environmental Clearance Order No. J-11011/12/90-IA-II dated 31/01/1992 as on 30-09-2023 are given below. All units granted EC are in operation.

<table>
<tr><th>Sr. No.</th><th>Conditions of the Environmental Clearance</th><th>Compliance of the conditions of EC</th></tr>
<tr><td>2.1</td><td colspan="2">Liquid Effluents</td></tr>
<tr><td>a)</td><td>Liquid effluent emanating from different plants will be properly treated before discharging</td><td>Liquid effluent from HMD complex is treated in Central effluent treatment plant systems, before discharging.</td></tr>
<tr><td></td><td>and should conform to the standards stipulated by Gujarat pollution control Board /prescribed under the Environment (Protection) Act,1986</td><td>Treated effluent is being monitored every month through MoEF&CC approved laboratory and the same is conforming to the GPCB standards for the period of April’23-Sep’23. Summary is given below:
<table>
<tr><th>Parameter</th><th>GPCB Limits</th><th>Avg</th><th>Min</th><th>Max</th></tr>
<tr><td>pH</td><td>6.5-8.5</td><td>7.4</td><td>7.2</td><td>7.7</td></tr>
<tr><td>TSS (mg/l)</td><td>100</td><td>16.5</td><td>14.0</td><td>19.0</td></tr>
<tr><td>O&G (mg/l)</td><td>10</td><td><1.8</td><td><1</td><td><2</td></tr>
<tr><td>COD (mg/l)</td><td>250</td><td>82</td><td>78</td><td>86</td></tr>
<tr><td>BOD (3days 27^{o}C)</td><td>50</td><td>21.3</td><td>19.0</td><td>23.0</td></tr>
<tr><td>NH3-N (mg/l)</td><td>50</td><td>4.1</td><td>3.1</td><td>5.1</td></tr>
</table>
Detail of the above results can be seen as Annexure-III.</td></tr>
<tr><td>b)</td><td>Adequate number of water quality monitoring stations should be set up to assess long term impact in the Tapi river, including on the estuarine zone</td><td>2 water quality monitoring locations have been setup–100m upstream and 100m downstream of treated effluent discharge point on Tapi River estuarine zone.</td></tr>
<tr><td></td><td>In consultation with the Gujarat state pollution control Board</td><td>These locations have been set up in consultation with GPCB officials during their visits.</td></tr>
<tr><td>c)</td><td>Guard ponds of sufficient holding capacity should be provided to cope with the effluents discharged due to process disturbance.</td><td>Multiple Holding tanks of sufficient capacity (~61,000 m3) have been provided to cope with the effluents discharge due to process disturbance.</td></tr>
<tr><td></td><td>The contributing units shall be immediately shut down and will not be restarted without bringing the system back to normalcy.</td><td>Noted.</td></tr>
<tr><td>2.2</td><td>Fresh water requirement for the plant should not exceed 12 MGD.</td><td>This condition is now amended by the Ministry permitting withdrawal of 1,85,564 m3/day in ECs issued vide F.No. J-13012/5/2021-IA. I(T) dated 31st Oct’2022 & J-11011/40/2015-IA II (I) dated 1st Nov’2022.
Fresh water consumption during April’23-</td></tr>
</table>

		Sep'23:**1,20,261 m3/day (26.7 MGD**).
	Efforts should be made to reduce the fresh water requirement by adopting adequate steps for reusing /recycling the treated effluents to the extent possible as the water is in short supply in the area.	The average recycled of treated effluent for the period **April'23-Sep'23 is 10,680 m3/day (18.97 %)**, thus reducing the freshwater consumption **19,54,441 m3** during reporting period.
	It should be ensured that the requirement of drinking water, irrigation, fisheries and other uses in the area are duly met.	State Irrigation dept. has permitted RIL to withdraw the fresh water from Tapi River after considering the requirement.
	The details of water balance at the intake point and apportionment of water for various issues should be provided within 3 months.	Complied
2.3	**Hazardous and toxic wastes:**	
a)	The characteristics of solid waste and their treatment should be detailed, including identification of the areas to be set aside for this purpose within the boundary limits of the plant.	GPCB in its Consent has authorized the HW generated at HMD with quantity and characteristics as in **Annexure-VIII.** Dedicated storage area known as "Central Hazardous Waste Storage Area" have been provided with in the plant to store the Hazardous wastes.
b)	Solid waste should be recycled to the maximum extent and the details of the same should be submitted, along with other technology details.	Hazardous Waste are recycled / reused to the maximum extent possible. Co-processing is adopted where permitted. During the reporting period is **84.2 %** waste utilize by recycling & co processing. Details of the recycled Hazardous wastes are given in **Annexure VIII.**
c)	Solid waste dumping area should be lined with PVC and made impervious so that ground water is not affected due to leaching and seepage of pollutants.	This condition is not applicable as HMD has not developed Solid waste dumping site.
	The solid waste disposal plan should be submitted to this Ministry once the process design and technological package has been finalized but not later than June 1992.	Complied.
d)	Necessary safety measures such as maintaining of adequate distances between the various storage tanks / vessels, quantity to be stored, pressure, temperature etc. should be taken to confine the impact zone within the plant premises under the worst accident situations.	Following National, International standards & recommendations of Risk Assessment Studies, safety measures as prescribed like sufficient distance between the tanks, temperature control, pressure gauge, etc., are provided, which ensures that the impact zone is confined within the plant premises under the worst accident situations.
	Necessary approval may be obtained from the regulatory authority as per Section 5(2) and 5(3) of the Hazardous Wastes (Management and Handling) Rules, 1989 of the Environment (Protection) Act, 1986.	Authorization (AWH-108333) under Hazardous Waste Rules have been obtained from GPCB.
2.4	**Air Emissions:**	

<table>
<tr><td>a)</td><td>The gaseous emissions from various process units should conform to the standards prescribed by the concerned authorities from time to time.</td><td>Summary of Gaseous emissions from various process units for the period April’23-Sep’23 are as below:

<table><tr><th>Parameter</th><th>Limits</th><th>Avg.</th><th>Min</th><th>Max</th></tr><tr><td>PM (mg/Nm3)</td><td>150</td><td>11.1</td><td>0.95</td><td>92.5</td></tr><tr><td>SO2(mg/Nm3)</td><td>1700</td><td>7.6</td><td>NIL</td><td>112.1</td></tr><tr><td>NOx (mg/Nm3)</td><td>450</td><td>67.2</td><td>9.4</td><td>184.2</td></tr><tr><td>HCl (mg/Nm3)</td><td>20</td><td>1.14</td><td>NIL</td><td>5.15</td></tr><tr><td>Cl2 (mg/Nm3)</td><td>9</td><td>BDL</td><td>BDL</td><td>BDL</td></tr><tr><td>HC (mg/Nm3)</td><td>15</td><td>BDL</td><td>BDL</td><td>BDL</td></tr></table>It can be seen from the above table that all results are conforming to the standards prescribed by GPCB Norms.
Please refer detail Emission Monitoring Report attached as Annexure I.</td></tr>
<tr><td></td><td>At no time the emission levels shall be permitted to go beyond the prescribed standards.</td><td>Based on the above table, during April’23-Sep’23, emission levels have not exceeded the prescribed standards.</td></tr>
<tr><td></td><td>In the event of failure of any pollution control systems provided in the unit, the unit should be shut down immediately and should not be restarted until the control measures are rectified to achieve the desired efficiency / standard.</td><td>Noted. During the period April’23-Sep’23, no such failure of pollution control equipment has occurred.</td></tr>
<tr><td></td><td>In the event of NOX levels in the Surat – Kawas – Hazira area exceeding the prescribed standards, the De-NOX system should be provided.</td><td>NOx standards are met at all times and there is no exceedance. There has been no indication regarding the Kawas – Hazira region requiring any such measures. Annexure II indicates the AAQ in the region.</td></tr>
<tr><td>b)</td><td>A minimum of 7 monitoring stations should be set up in tune with wind direction as well as where maximum ground level concentration is anticipated.</td><td>The site has established 7 Ambient Air Quality (AAQ) monitoring stations based on the wind direction where maximum ground level concentration (GLC) occurs.</td></tr>
<tr><td></td><td>Location of air quality monitoring stations should be decided after modeling exercise and in consultation with the State Pollution Control Board.</td><td>Location of AAQ stations has been decided based on the mathematical modelling studies carried out by NEERI and in consultation with GPCB officials. An intimation Letter in this regard has been submitted to GPCB.</td></tr>
</table>

<table>
<tr>
<td></td>
<td>Monitoring of stack and ambient air quality should be done on a regular basis and data recorded and furnished to the Gujarat Pollution Control Board every three months and to this Ministry every six months, along with the statistical analysis of the same.</td>
<td>Complied. The results are submitted every month to GPCB and every six months to Regional Office of MoEF&CC with statistical analysis.
Summary of Stack Emission for a period of April’23-Sep’23 is as provided as follows:

<table>
<tr><th>Parameter</th><th>Limits</th><th>Avg.</th><th>Min</th><th>Max</th></tr>
<tr><td>PM (mg/Nm3)</td><td>150</td><td>11.1</td><td>0.95</td><td>92.5</td></tr>
<tr><td>SO2(mg/Nm3)</td><td>1700</td><td>7.6</td><td>NIL</td><td>112.1</td></tr>
<tr><td>NOx (mg/Nm3)</td><td>450</td><td>67.2</td><td>9.4</td><td>184.2</td></tr>
<tr><td>HCl (mg/Nm3)</td><td>20</td><td>1.14</td><td>NIL</td><td>5.15</td></tr>
<tr><td>Cl2 (mg/Nm3)</td><td>9</td><td>BDL</td><td>BDL</td><td>BDL</td></tr>
<tr><td>HC (mg/Nm3)</td><td>15</td><td>BDL</td><td>BDL</td><td>BDL</td></tr>
</table>

Summary of AAQ data for a period of April’23-Sep’23 are as follows:

<table>
<tr><th>Parameter</th><th>Limits</th><th>Avg</th><th>Min</th><th>Max</th></tr>
<tr><td>PM10 (ug/m3)</td><td>100</td><td>58.9</td><td>38.0</td><td>78.0</td></tr>
<tr><td>PM2.5 (ug/m3)</td><td>60</td><td>19.0</td><td>8.8</td><td>28.2</td></tr>
<tr><td>SO2 (ug/m3)</td><td>80</td><td>20.2</td><td>11.7</td><td>28.1</td></tr>
<tr><td>NO2 (ug/m3)</td><td>80</td><td>26.7</td><td>16.2</td><td>36.2</td></tr>
<tr><td>NMHC (ug/m3)</td><td>-</td><td>BDL</td><td>BDL</td><td>BDL</td></tr>
<tr><td>Benzene (ug/m3)</td><td>-</td><td>3.7</td><td>2.6</td><td>4.8</td></tr>
</table>

Pl. refer detailed Stack and Ambient Air quality Monitoring Data with statistical analysis as Annexures – I & II, respectively.</td>
</tr>
<tr>
<td>c)</td>
<td>Only Sulphur free natural gas should be used as fuel.</td>
<td>Gas with negligible Sulphur content is being used in the plant. (Sulphur content in natural gas is < 1 ppm) during reporting period.</td>
</tr>
<tr>
<td></td>
<td>However, LSHS having sulphur content below 1% may be used during emergency, under intimation to the State Pollution Control Board.</td>
<td>Sulphur content of LSHS being used in the plant is less than 1%.
GPCB has already granted Consent for the usage of LSHS as a fuel in the Consent to Operate.</td>
</tr>
<tr>
<td>d)</td>
<td>Low NOX burners should be provided in all the furnaces to keep the emissions of NOX to the bare minimum.</td>
<td>Low NOx burners have been provided which restrict the NOx well below the GPCB norms. During the period of April’23-Sep’23. NOx values were observed in the range of 9.4-184.2 mg/Nm3. Details of NOx emission can be referred at Annexure-I.</td>
</tr>
<tr>
<td>e)</td>
<td>Fugitive emissions should be monitored continuously, including hydrocarbons and other organic compounds.</td>
<td>Fugitive emissions of HC and other organic compounds are monitored regularly under Leak Detection & Repair Program by using Photo ionization detector.
Detectors / Sensors for detecting HC Leakages are installed at various locations within plants.</td>
</tr>
</table>

f)	All gaseous emissions in the system, including incinerated material shall be taken to the flare system	All gaseous emissions containing hydrocarbons are taken to the flare system through a closed loop system. Total 6 flares are provided in the complex.
	And the flare should be smokeless and non-luminous.	Efficient flare design and regular maintenance ensures smokeless and non-luminous flame in the Flares.
2.5	**Transport:**	
	The transport of naphtha, ethylene and propylene should be only by pipelines. Effort should be made to transport products through sea / rail / road to the extent possible.	Naphtha, ethylene, propylene and other raw materials are brought through sea route at Jetties and SBM developed as part of this Project. From there, these materials are being transported through pipelines
	Transportation through road should be kept to the bare minimum to avoid any congestion problem.	Road transport is minimized.
2.6	**Occupational Health:**	
	Adequate measures should be taken to avoid any occupational diseases likely to be contracted amongst the employees as a result of exposure to the various chemicals, gases, fumes, vapours, dust etc.	All precautions are taken to avoid any exposure of chemicals to employees to prevent them from contracting any occupational diseases.
	An Industrial hygiene laboratory may be set up for periodical monitoring of occupational health of the employees.	A well-equipped Occupational Health Centre (OHC) with dedicated laboratory has been established with in the complex.
	Medical Surveillance of the employees should be done, which should include pre-employment and regular medical examination and record maintained.	Health surveillance for employees and contract worker is being done on a regular basis and records are maintained. Regular medical examination is once in a year for all employees.
2.7	**Technology package – State of the Art**	
	Full details of technology and processes to be adopted must be provided to this Ministry for examination within a period of one month of the signing of the technology transfer agreement with the Collaborators and the documents are exchanged.	Details about technology was submitted to the MoEF&CC.
	The Ministry reserves the right to modify or add conditions in the light of the assessment of the technology in order to ensure cleaner production and adoption of such technologies which are low waste generating and less polluting.	Noted. -
2.8	**Carrying Capacity**:	
a)	The State Govt. of Gujarat would be responsible for preparation of a comprehensive carrying capacity study of the Hazira area to the satisfaction of the Ministry.	Noted.

b)	The Project Authority (Reliance petrochemicals Limited / Reliance Industries Limited) on its part would fulfill the obligations if any, to the Government of Gujarat in respect of the carrying capacity study and comply with such recommendations arising out of the study that may relate to the project and which State or Central Government may direct implementation of with or without modification.	Noted
c)	Based on the recommendations of the report, additional measures for control of pollution may be prescribed by either the State or Central Government which should be strictly adhered to.	Noted
2.9	A comprehensive EIA report covering one year data / and Risk Analysis Report should be submitted within 3 months.	Comprehensive EIA and Risk Assessment Reports have been submitted to Ministry of Environment & Forests.
2.10	Green belt of adequate width and density should be provided all around the plant. A detailed green belt development plan taking into account various aspects including attenuation of noise, air pollution, wastewater utilization etc. should be submitted to this Ministry within six months.	Green Belt development plan have been submitted to MoEF&CC along with EIA Report in Sept 1992. Green Belt with in Hazira complex is developed as per the plan. Around 123 ha of green cover provided within Hazira Petrochemical complex. Besides, payment also made to forest deptt for 50 Ha of plantation towards Green belt development / carbon sink enhancement on forest land of villages Suvali, Hazira & Bhatlai nearest to RIL Hazira. Width of Green Belt provided at the periphery is in the range of 30 – 80 meters taking into consideration the noise attenuation and air pollution. Plant species are selected as per CPCB guidelines such as Peltophorum, Acacia, Cassia, Thevetia, Pelto, Tecoma, Exora, Kinjelia, Gulmahor etc. Density maintained is 1000 trees per acre. During the reporting period is **32,653 Nos** saplings have been planted in Green Belt area as gap filling.
2.11	A separate Environmental Management Cell with suitable qualified people to carry out various functions should be set up under the control of Senior Executive who in turn will report directly to the top executive of the organization.	A separate Environment Cell headed by Environment Head with environment qualification and more than 20 years of experience. The cell is supported by qualified Environment professionals (Env Engg). Environment Head report to Site President.
	The Cell should be created in the beginning itself so that if is fully aware of the control measures provided in the technological packages to be adopted as well as the techniques of the implementation of the same.	The Environment cell has been created since establishment of the plant.
2.12	Disaster Management Plan and Emergency Preparedness Plan should be prepared and got approved from the Competent State Authority and submitted to this Department	Disaster Management Plan and Emergency Preparedness Plan (DMP & ERP) are in place and approved by competent authority. It has been submitted to MoEF&CC within 3 months

	within three months, for meeting any emergency situation arising due to fire and explosion hazards.	along with EIA Report.
2.13	Adequate funds should be earmarked for environmental protection measures and these funds should not be diverted for other purposes and year wise expenditure would be reported to this Ministry.	Sufficient funds are earmarked every year for environment protection measures only. Expenditure during the reporting period is Rs. **29.57 crore.**
2.14	The project authorities must ensure adherence to the provisions of the Notification dated 19th November 1991 under Section 3(1) and section 3(2)(v) of the Environment (Protection) Act, 1986 and Rules 5(3)(d) of Environment (Protection) Act Rules, 1986, declaring Coastal Stretches as Coastal Regulation Zone (CRZ) and regulating activities in the CRZ	The project adheres to the various provisions of EP Act, 1986 and EP Rules, 1986.
3	The Ministry reserves the right to revoke the clearance if implementation of any of the conditions as stipulated by this Ministry is not satisfactory. The above conditions may be modified or additional ones may be prescribed after examining and reviewing the comprehensive EIA / Risk Analysis Report to be submitted by the project proponents as indicated under para 2.9 which should be strictly adhered to. Any other conditions imposed or alterations in the existing conditions will be fully implemented by the project authority in a time bound manner.	Additional conditions have not been added to this EC and no condition has been modified
4	These conditions will be in force, inter-alia, under the provisions of the Water (Prevention and Control of Pollution) Act, 1974, Air (Prevention and Control of Pollution) Act, 1981; The Environment (Protection) Act, 1986 and the Public Liability Insurance Act, 1991 along with their amendments and rules there under.	We have noted this condition
5	The state Gov. should set up a monitoring committee to oversee the implementation of the above conditions and should meet once in six month at least.	Not applicable to us. We are not aware of any such steps taken by State Govt.
6.	This supersedes the earlier letter of even number dated 20th June 1991.	We have noted this condition

Reliance Industries Limited – Hazira Manufacturing Division

Compliance status of various conditions stipulated by Ministry of Environment & Forests, New Delhi in their letter No. J-11011/32/2005- I(A) II - dated 30th June 2005 as on 30-09-2023 are given below.

All units granted EC under this letter are operational except Butanediol, Styrene & GT-10(30MW).

<table>
<tr><th>Sr. No.</th><th>Conditions of the Environmental Clearance</th><th>Compliance of the conditions of the Environmental Clearance</th></tr>
<tr><td>A.</td><td colspan="2">SPECIFIC CONDITIONS</td></tr>
<tr><td>i</td><td>The gaseous emissions (SO_2, NO_x, CO, NMHC, Benzene, Cl_2 and HCl) from the various process units should conform to the standards prescribed under Environment (Protection) Rules, 1986 or norms stipulated by the SPCB whichever is more stringent.</td><td>Gaseous emissions of SO_2, NO_x, HC, Cl_2 and HCl from process units are monthly monitored through MoEF&CC approved laboratory and its result indicate conformance to the GPCB prescribed standards.
A summary of the gaseous emissions from various existing process stacks for April’23-Sep’23 is presented below:
<table>
<tr><th>Parameter</th><th>Limits</th><th>Avg.</th><th>Min</th><th>Max</th></tr>
<tr><td>PM (mg/Nm3)</td><td>150</td><td>11.1</td><td>0.95</td><td>92.5</td></tr>
<tr><td>SO2 (mg/Nm3)</td><td>1700</td><td>7.6</td><td>NIL</td><td>112.1</td></tr>
<tr><td>NOx (mg/Nm3)</td><td>450</td><td>67.2</td><td>9.4</td><td>184.2</td></tr>
<tr><td>HCl (mg/Nm3)</td><td>20</td><td>1.14</td><td>NIL</td><td>5.15</td></tr>
<tr><td>Cl2 (mg/Nm3)</td><td>9</td><td>BDL</td><td>BDL</td><td>BDL</td></tr>
<tr><td>HC (mg/Nm3)</td><td>15</td><td>BDL</td><td>BDL</td><td>BDL</td></tr>
</table>
SO2 and NOx also monitored periodically in VCM furnaces as per EPA 4th amendment rules.
Pls refer detailed Stack Monitoring report as Annexure-I.</td></tr>
<tr><td></td><td>At no time, the emission level shall go beyond the stipulated standards.</td><td>During April’23-Sep’23 emission levels have not exceeded the prescribed standards.</td></tr>
<tr><td></td><td>In the event of failure of pollution control system(s) adopted by the unit, the respective unit should not be restarted until the control measures are rectified to achieve the desired efficiency.</td><td>Noted. During the reporting period, no such failure of pollution control equipment has been observed.</td></tr>
<tr><td>ii</td><td>Ambient air quality monitoring stations, (SPM, SO_2, NO_x and NMHC, Benzene) shall be set up in the petrochemical complex in consultation with SPCB, based on occurrence of maximum ground level concentration and down-wind direction of wind.</td><td>The site has established 7 AAQ monitoring stations within petrochemical complex based on the mathematical modeling studies carried out by NEERI considering wind direction and the maximum ground level concentration. An intimation letter is submitted to GPCB on 03.06.1992.
A Summary of the Ambient Air Quality (AAQ) monitoring results of April’23-Sep’23 are as below:</td></tr>
</table>

		<table><tr><th>Parameter</th><th>Limits</th><th>Avg</th><th>Min</th><th>Max</th></tr><tr><td>PM10 (ug/m3)</td><td>100</td><td>58.9</td><td>38.0</td><td>78.0</td></tr><tr><td>PM2.5 (ug/m3)</td><td>60</td><td>19.0</td><td>8.8</td><td>28.2</td></tr><tr><td>SO2 (ug/m3)</td><td>80</td><td>20.2</td><td>11.7</td><td>28.1</td></tr><tr><td>NO2 (ug/m3)</td><td>80</td><td>26.7</td><td>16.2</td><td>36.2</td></tr><tr><td>NMHC (ug/m3)</td><td>-</td><td>BDL</td><td>BDL</td><td>BDL</td></tr><tr><td>Benzene(ug/m3)</td><td>-</td><td>3.7</td><td>2.6</td><td>4.8</td></tr></table> The values are on 24 hrs average, however the NAAQS specifies annual average for comparison. Details of AAQ &CAAQMS data can be referred as **Annexure-II.**
	The monitoring network must be decided based on modeling exercise to represent short term GLCs.	Monitoring network is decided based on the mathematical modelling carried out by NEERI indicating the locations for maximum GLC's.
	Continuous on-line stack monitoring equipment should be installed for measurement of SO2 and NOx.	Continuous online stack monitoring analyzers have been provided for measurement of SO2, NOx in all stacks as per CPCB guidelines.
	Data on VOC shall be monitored and submitted to the SPCB / Ministry.	VOCs are regularly monitored in the plant through VOC monitors and the data is submitted to GPCB/MoEF&CC.
	CPCB shall independently monitor the air quality of the project.	Noted.
iii	Fugitive emissions of HC from product storage tank yards etc., must be regularly monitored.	Fugitive emissions of hydrocarbon (HC) from product storage tanks are monitored on a six-monthly basis under Leak Detection & Repair Program.
	Sensors for detecting HC leakage shall also be provided at strategic locations.	Detectors for monitoring HC leakages have been installed at strategic locations.
	The company shall use low Sulphur fuel to minimize SO_2 emission.	Low Sulphur fuel like Natural gas & LSHS is used in the plant to minimize SO2 emission. NG used in the plant is having Sulphur content < 1 ppm. Sulphur content of LSHS being used in the plant is less than 1%.
iv	The company shall install online O_2 monitor in the furnaces.	Online O2 monitors are installed in the furnaces to keep track of combustion efficiency.
	And boilers shall be operated with minimum excess air for optimal fuel consumption and to minimize NOx emission.	Boilers are operated at minimum excess air and the online O2 monitors in furnaces are used for keeping track of the air/fuel ratio. By controlling the flow of air,NOx generation is minimized.
	Fire stack burners and steam injection system shall be designed for smokeless operation to minimize NOx emission.	6 Flare stacks with steam injection system for smokeless operation to minimize NOx emission.
V	For control of fugitive emissions, the company shall provide for a main flare system and an auxiliary flare system and route all unsaturated hydrocarbons to the flare system.	A closed loop flaring system is provided at the plant for control of fugitive emissions.
	The flare system shall be so designed for smokeless burning.	Flare stacks have been designed with steam injection system to have smokeless burning.
	All the pumps and other equipment where there is a likelihood of HC leakages shall be provided with LEL indicators.	LEL detectors for monitoring HC leakages have been installed at strategic locations.

	And also provide for immediate isolation of such equipment, in case of a leakage.	Isolation of leaking equipment is immediately made based on the LEL detector alarm.
	The company shall adopt Leak Detection and Repair (LDAR) program for quantification and control of fugitive emissions.	LDAR program is carried out in each plant on quarterly basis in all plants for quantification and control of Fugitive emissions.
vi	The product loading gantry shall be connected to the product sphere in closed circuit through the vapor arm connected to the tanker.	Product loading gantry is connected with respective product tanks like Benzene, Xylene, Toluene, etc., with vapor arm connected to the tanker. The vapors are recovered through vapor recovery system which is installed at Product loading gantry.
	Data on fugitive emissions shall be regularly monitored and records maintained.	Fugitive emissions are being regularly monitored through LDAR program and records maintained.
vii	The company shall ensure that no halogenated organic is sent to the flares.	Complied, no halogenated HC is sent to the flare.
	If any of the halogenated organic are present then the respective streams may be incinerated, if there are no technically feasible or economically viable reduction/recovery options.	Halogenated organics from VCM plant are incinerated in the incinerator provided at the plant as recovery is not techno-economically feasible.
	Any stream containing organic carbon, other than halogenated shall be connected to proper flaring system, if not to a recovery device or an incinerator.	Emission streams containing organic carbon i.e unsaturated hydrocarbons other than halogenated are connected to the existing flares (6 nos).
viii	All new standards/norms that are being proposed by the CPCB for petrochemical plants shall be applicable for the proposed expansion unit.	Complied
	The company shall conform to the process vent standards for organic chemicals including non-VOCs and all possible VOCs i.e. TOCs standard and process vent standards for top priority chemicals.	Complied
	The company shall install online monitors for VOC measurements. Action on the above should be taken during the detailed design stage of the NCC and intimate to this Ministry.	Online detectors for VOC measurements have been installed at appropriate locations in the plants based on the properties of chemicals. Around 1674 LEL type detectors for Cl_2, CO, EO, NH3, Butadiene, HCl, H_2S, H_2, O_2 etc. and 31 VOC monitors for Butadiene, Benzene, VCM, EDC etc. are installed at respective plant location.
ix	The company shall install bag filters to control flue gas emission. Process emissions shall be controlled by scrubbers.	Suitable air pollution control equipment like Bag filters, absorbers, scrubbers, cyclone separator, wet ESP etc., are installed as per process requirement of respective plant to control process emissions.

<table>
<tr><td></td><td>Flue gas emissions from the various stacks attached to the boilers, furnace/heaters shall conform to the prescribed standards.</td><td>As per consent, flue gas stacks parameters SO2, NOx, PM, HCl, Cl2 & HC are regularly monitored through MoEF&CC approved laboratory and the summary of its results for the period April’23-Sep’23 is presented below:

<table>
<tr><th>Parameter</th><th>Limits</th><th>Avg.</th><th>Min</th><th>Max</th></tr>
<tr><td>PM (mg/Nm3)</td><td>150</td><td>11.1</td><td>0.95</td><td>92.5</td></tr>
<tr><td>SO2 (mg/Nm3)</td><td>1700</td><td>7.6</td><td>NIL</td><td>112.1</td></tr>
<tr><td>NOx (mg/Nm3)</td><td>450</td><td>67.2</td><td>9.4</td><td>184.2</td></tr>
<tr><td>HCl (mg/Nm3)</td><td>20</td><td>1.14</td><td>NIL</td><td>5.15</td></tr>
<tr><td>Cl2 (mg/Nm3)</td><td>9</td><td>BDL</td><td>BDL</td><td>BDL</td></tr>
<tr><td>HC (mg/Nm3)</td><td>15</td><td>BDL</td><td>BDL</td><td>BDL</td></tr>
</table>
Details of Stack Monitoring are attached as Annexure-I</td></tr>
<tr><td>x.</td><td>The additional effluent generation shall not exceed 23330 m3/d (23250 m3/d of process effluent and 80m3/d of domestic effluent).</td><td>The total effluent discharge quantity got amended to 82,286 m3/day in ECs issued vide F.No. J-13012/5/2021-IA. I(T) dated 31st Oct’2022 & J-11011/40/2015-IA II (I) dated 1st Nov’2022.

Our average treated effluent discharge rate is 45,626 m3/day including domestic sewage for the period of April’23-Sep’23 which is well below the permissible limit.</td></tr>
<tr><td></td><td>The wastewater generated shall be treated in comprehensive waste water treatment plant.</td><td>Wastewater generated from the individual process units is being treated in central wastewater treatment plant with primary, secondary, and tertiary treatment facilities.</td></tr>
<tr><td></td><td>As reflected in the EIA/EMP report, the company shall maximize the recycling of treated effluent</td><td>Effluent recycling system has been implemented at the plant. Treated effluent is recycled as cooling water make up, DM water production etc. Average effluent recycled for period of April’23-Sep’23 is 10,680 m3/day (18.97%). Total 19,54,441 m3 effluent recycling done during reporting period.</td></tr>
<tr><td></td><td>and treated effluent after conforming to the prescribed standards shall be discharged through pipeline in Tapi estuary.</td><td>The results of treated effluent conform to the prescribed standards. The treated effluent is discharged through the existing marine disposal system in Tapi estuary.
The summary of the treated effluent quality for the reporting period April’23-Sep’23 is as below:

<table>
<tr><th>Parameter</th><th>GPCB Limits</th><th>Avg.</th><th>Min.</th><th>Max.</th></tr>
<tr><td>pH</td><td>6.5-8.5</td><td>7.4</td><td>7.2</td><td>7.7</td></tr>
<tr><td>TSS (mg/l)</td><td>100</td><td>16.5</td><td>14.0</td><td>19.0</td></tr>
<tr><td>O&G(mg/l)</td><td>10</td><td><1.8</td><td><1</td><td><2</td></tr>
<tr><td>COD (mg/l)</td><td>250</td><td>82</td><td>78</td><td>86</td></tr>
<tr><td>BOD (3 days 27^{o}C)</td><td>50</td><td>21.3</td><td>19.0</td><td>23.0</td></tr>
<tr><td>NH3-N (mg/l)</td><td>50</td><td>4.1</td><td>3.1</td><td>5.1</td></tr>
</table>
Detail of treated effluent quality can be seen as Annexure-III.</td></tr>
</table>

	The company shall provide diffuser at the pipeline for proper dispersion of effluent.	A multiport diffuser is provided at the end of treated effluent discharge line for proper dispersion of effluent.
	The domestic effluent after treatment and conforming to the prescribed standards shall be used for green belt development.	The domestic effluent generated within the site is treated in the biological section of the effluent treatment plant.
xi.	For solid waste management, coke from the cracker plant, slop oil, spent oil and spent catalyst shall be sold to authorized re-processors.	Saleable Hazardous wastes such as used oil (spent oil), Waste oil (slop oil) and spent catalysts are sold only to authorized re-processors. Cracker plant coke is disposed for Co-processing in cement plants. During the reporting period- **April'23-Sep'23**: Spent Oil sold : 67.92 MT Slop Oil sold : 160.7 MT Spent Catalyst Sold : 187.33 MT Cracker Coke disposed : 21.03 MT
	Organic residues shall be incinerated in a dedicated incineration and ash will be disposed off in secured landfill at BEIL, Ankleshwar.	Organic residues are disposed mainly for co processing in cement plants. Incinerator ash is disposed in secured landfill of BEIL, Ankleshwar/Dahej as and when generated. During **April'23-Sep'23**, these waste disposals were as follows: • Organic residues sent for co-processing: 350.15 MT. • Incinerator ash disposed at secured landfill site of BEIL Ankleshwar/ Dahej (TSDF): Nil
xii.	The company shall obtain necessary approval from the State Irrigation Dept. to meet the additional water requirement from the existing canal network.	Required approval has been obtained from Narmada, Water Resources, water supply and Kalpsar dept of Govt of Gujarat
xiii	M/s. RIL shall undertake rainwater harvesting measures, to recharge the ground water and also to minimize the water drawl from the weir.	As RIL Hazira plant is located near Tapi Estuary due to tidal effect and close proximity to sea, Ground water table is high, and water is saline due to salinity ingress. Hence, we have installed rainwater collection and storage ponds in the plant to reduce water drawl from the weir to that extent. Surface runoff & roof top rainwater collection scheme is implemented at RelPipe plant, POY cooling towers, and Raw Water-2 storm channel. Ground water recharge wells have been provided as CSR initiative in villages.
xiv.	Green belt shall be raised in an area of 63 hectares to mitigate the fugitive emissions from the plant.	Around 123 Ha of green cover provided within Hazira Petrochemical complex. Besides, payment also made to forest deptt for 50 Ha of plantation towards Green belt development/carbon sink enhancement on forest land of villages Suvali, Hazira & Bhatlai nearest to RIL Hazira.
	Selection of plant species shall be as per the Central Pollution Control Board guidelines.	Plant species are selected as per CPCB guidelines.

xv.	Occupational Health Surveillance of the workers should be done on a regular basis and records maintained as per the Factories Act.	Occupational Health surveillance for workers is being done on a regular basis and records are maintained as per the Factories Act.
B.	**GENERAL CONDITIONS:**	
i	The project authorities must strictly adhere to the stipulations made by the Gujarat State Pollution Control Board and the State Government.	As seen in the above tables, we are complying with all the standards prescribed by GPCB. Refer **Annexure-V** for Compliance of Consent to Operate.
ii.	No further expansion or modernization in the plant should be carried out without prior approval of the Ministry of Environment and Forests.	Noted.
iii.	At no time, the emissions should go beyond the prescribed standards.	At no time emissions have gone beyond the prescribed standards during the reporting period **April'23-Sep'23.**
	In the event of failures of any pollution control system adopted by the units, the respective unit should be immediately put out of operation and should not be restarted until the desired efficiency has been achieved.	Noted. During the reporting period **April'23-Sep'23**, no such failure of pollution control equipment has occurred.
iv.	The overall noise levels in and around the plan area shall be kept well within the standards (85dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation.	Noise control measures such as acoustic hoods, enclosures and silencers etc. are provided at high noise generating source in the plant.
	The ambient noise levels should conform to the standards prescribed under EPA Rules, 1989 viz. 75dBA (daytime) and 70 dBA (night time).	Maximum Noise level found at periphery of RIL HMD in the range of **55.8-69.1 dBA (Leq)** during daytime and **53.7- 65.6 dBA (Leq**) during nighttime within reporting period **April'23-Sep'23.**
v	The project authorities must strictly comply with the provisions made in Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 as amended in 2000 for handling of hazardous chemicals etc.	Provisions of the MSIHC Rules, 1989 are being complied
	Necessary approvals from Chief Controller of Explosives must be obtained before commission of the project.	Complied
vi	The project authorities must strictly comply with the rules and regulations with regard to handling and disposal of hazardous wastes in accordance with the Hazardous Waste (Management, Handling & Transboundry) Rules,2008.	Hazardous waste generated at the site is managed as per the Authorization granted by GPCB.
	Authorization from the State Pollution Control Board must be obtained for collections / treatment / storage / disposal of hazardous wastes.	Complied
I	The project authorities will provide adequate funds both recurring and non-recurring to implement the conditions	Adequate funds have been allocated for implementing the conditions Stipulated by the statutory authorities. Recurring expenditure

	stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein.	incurred to comply with the conditions stipulated by MoEF&CC as well as by GPCB during the reporting period is **Rs 29.57 crore**.
	The funds so provided should not be diverted for any other purposes.	Complied.
viii	The stipulated conditions will be monitored by the Regional of this Ministry at Bhopal/Central Pollution Control Board/State Pollution Control Board.	Noted..
	A six-monthly compliance report and the monitored data should be submitted to them regularly.	Six monthly compliance report is being submitted to MoEF&CC, RO, Gandhinagar regularly. Last compliance report was submitted vide our letter (696/31052023/HMD/MoEF&CC) dated 31/05/2023 sent through email at iro.gandhingr-mefcc@gov.in dated 01.06.2023
ix	The Project Proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the State Pollution Control Board/ Committee and may also be seen at Website of the Ministry of Environment and Forests at http://www.envfor.nic.in. This should be advertised within seven days from the date of issue of the clearance letter at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same should be forwarded to the Regional office.	Public has been informed about the Environment clearance through the advertisement in the local newspaper. A copy of advertisement has been submitted to the ministry along with the first six monthly compliance report.
x	The Project Authorities shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of commencing the land development work.	Financial closure and project commencement information already provided in our earlier submission.

Reliance Industries Limited – Hazira Manufacturing Division

Compliance Status for the Environmental Clearance Order no. SEIAA/GUJ/EC/5(e)/259/2011 dated 27/12/2011 and Amendment no. EIA-10-2010-698/1156 dated 06-11-2012 as on 30-09-2023.

The plants that have been accorded Environmental Clearance on 27-12-2011 are: Purified Terephthalic Acid, Poly Butadiene Rubber and Environment clearance amendment on 06-11-2012 for Poly Butadiene Rubber and Styrene Butadiene Rubber product mix. The projects (SBR &PBR) are commissioned and in operation.

Sr. No.	Conditions of the Environmental Clearance	Compliance of the conditions of the Environmental Clearance
A.	**SPECIFIC CONDITIONS**	
A.1	**WATER**	
1.	Fresh water requirement shall not exceed 1,59,314 KLD after the proposed expansion.	Our average water withdrawal rate **1,20,261 KLD** for the period of **April'23 to Sep'23**.
	and it shall be drawn from Singapore weir after getting due permission from the Narmada Water Resources, Water supply and Kalpsar Department.	Approval from Narmada Water Resources, water supply and Kalpasar department is obtained for water drawl from Singapore weir.
	No ground water shall be used for the project.	No ground water is used at the site for this project.
2.	The effluent discharge from the HMD Complex shall not exceed 55,727 KLD after the proposed expansion.	Our average treated effluent discharge rate, after commissioning of PBR and SBR plant, is **45,626 m3/day** for the period of **April'23 to Sep'23.**
3.	The effluent arising out of the proposed PTA, PBR and SBR plant shall be treated in the HTDS effluent treatment facilities.	The effluent arising from PBR & SBR plants are treated in HTDS section of the ETP.
4.	For treatment of the effluent from upcoming PTA plant, a new anaerobic pre-treatment facility comprising of new Bio-Digesters + Conditioning Tank, Biogas Holder + Compressor, Chemical House for PR, Equalization Tank, High COD Holding Tank etc. shall be installed. The partially treated effluent from the anaerobic pretreatment section shall be transferred into the Aeration Tank of the existing HTDS effluent section for its further treatment.	This condition is not applicable for the PTA plant mentioned in this EC is not yet established.
5.	The existing aerobic treatment facilities shall be up-graded by providing new Bio-tower-1, Aeration Tank-1, Secondary Clarifier-1, Techno fungi etc. as mentioned in the EIA Report of the project.	This condition is not applicable for the reporting period as PTA plant mentioned in this EC is not established.

<table>
<tr><td>6.</td><td>The ETP shall be operated regularly and efficiently so as to achieve the GPCB norms at the outlet.</td><td>The ETP was operated continuously and efficiently during reporting period. A summary of effluent monitoring results for the period April’23 to Sep’23 is presented below:

<table>
<tr><th>Parameter</th><th>GPCB Limits</th><th>Avg</th><th>Min</th><th>Max</th></tr>
<tr><td>pH</td><td>6.5-8.5</td><td>7.4</td><td>7.2</td><td>7.7</td></tr>
<tr><td>TSS (mg/l)</td><td>100</td><td>16.5</td><td>14.0</td><td>19.0</td></tr>
<tr><td>O&G(mg/l)</td><td>10</td><td><1.8</td><td><1</td><td><2</td></tr>
<tr><td>COD (mg/l)</td><td>250</td><td>82</td><td>78</td><td>86</td></tr>
<tr><td>BOD (3 days 27^{o}C)</td><td>50</td><td>21.3</td><td>19.0</td><td>23.0</td></tr>
<tr><td>NH3-N (mg/l)</td><td>50</td><td>4.1</td><td>3.1</td><td>5.1</td></tr>
</table>

Detail Treated Effluent monitoring data can be referred at Annexure-III.</td></tr>
<tr><td>7.</td><td>The treated effluent from the HMD Complex shall be discharged into the Tapi estuary through the existing effluent disposal pipeline equipped with multiport diffuser.</td><td>Treated effluent from HMD complex is being discharged into Tapi estuary through existing effluent disposal pipeline equipped with multiport diffuser during reporting period.</td></tr>
<tr><td>8.</td><td>Holding Tanks of at least two days storage capacity shall be provided for storage of effluent in case of emergency maintenance of effluent discharge pipeline.</td><td>Multiple Holding tanks of sufficient capacity (~61,000 m3) have been provided for storage of effluents in case of emergency maintenance of effluent discharge pipeline.
No emergency maintenance of effluent discharge pipeline carried out during reporting period April’23 to Sep’23.</td></tr>
<tr><td>9.</td><td>The unit shall provide metering facility at the inlet and outlet of the ETP and maintain the records of the same.</td><td>Metering facility is provided at the inlet & outlet of the ETP, and records are maintained.</td></tr>
<tr><td></td><td>The unit shall also provide online monitoring system for pH, TDS & TOC parameters at the outlet of the ETP.</td><td>Online pH, flow and TOC analyzer are provided at treated effluent discharge line. The effluent is discharged in Tapi Estuary so monitoring of TDS level is not done.</td></tr>
<tr><td>10.</td><td>A proper logbook of ETP operation and showing the quantity of effluent generated, reused / recycled, utilized in plantation / gardening etc. shall be maintained and furnished to the GPCB from time to time.</td><td>Logbook of ETP operation is maintained and furnished to GPCB as and when asked. Break up of existing treated effluent for the reporting period April’23 to Sep’23 is as below:

<table>
<tr><th>Description</th><th>Effluent quantity (M3/day)</th></tr>
<tr><td>Treated effluent Recycled to cooling water make up and for DM water generation</td><td>10680</td></tr>
<tr><td>Effluent Discharged</td><td>45626</td></tr>
<tr><td>Total Effluent quantity</td><td>56306</td></tr>
</table></td></tr>
<tr><td>11.</td><td>Regular performance evaluation of the ETP shall be undertaken every year to check its adequacy,</td><td>Performance evaluation by external agencies is being carried out annually through environmental</td></tr>
</table>

	through credible institutes like L.D. College of Engineering, NPC or such other institutes of similar repute, and its records shall be maintained.	auditor appointed by GPCB and the records are maintained.
12.	The effluent disposal pipeline shall be monitored regularly by the company and it shall be ensured that there is no leakage from the pipeline.	Effluent disposal pipeline is being checked regularly by site maintenance department for leakages.
	In case of any such eventualities, the company shall immediately stop disposal through the pipeline and take the corrective measures.	No such eventualities happened during reporting period **April'23 to Sep'23** .
13.	The post project environmental monitoring through the reputed institutes / organizations shall be carried out in order to assess the changes if any in the marine / estuarine environment due to disposal of effluent.	Post project environment monitoring was carried out by NIO in the year 2014 to assess the impact on estuarine environment due to disposal of effluent.
14.	The unit shall join and participate financially and technically for any common environmental facility / infrastructure as and when the same is taken up either by the GIDC or GPCB or any such authority created for this purposed by the Govt. / GIDC.	Noted.
A.2	**AIR**	
15.	Natural gas shall be used as a fuel in the proposed plants.	Natural Gas is being used as a fuel in PBR plant during reporting period whereas SBR plant does not require any fuel as it has no furnace, heaters, or vaporizer.
16.	All fuel combustion units shall be operated with minimum excess air so that fuel combustion is optimized, and emission of NO_x is minimized.	All fuel combustion units are operated at minimum excess air. By controlling the flow of air, NOx generation is minimized.
	Tangential / low NOx burners in all combustion units with online analyzer shall be implemented in the proposed plants.	The combustion units in the PBR plant is based on advance combustion technology generating low NOx.
17.	For the proposed PTA Plant, air pollution control systems viz. Quench System and Wet Electrostatic Precipitator for PTA Residue Incinerator, High Pressure Catalytic Combustion unit for Turbine Expander (for burning HC/VOC), Scrubbing Systems (Catalytic Combustion, Filtration, Condensation, Multistage Scrubbing), Candle type Bag Filters, Wet Electrostatic Precipitator (WESP), Scrubber for storage Tank Vents etc. shall be provided.	PTA plant approved in this EC is not yet established.
18.	For the proposed PBR Plant, air pollution control systems viz. Flare Knockout Pot for routing to flare, Wastewater Stripper for Hydrocarbon Recovery, Fume Hoods for exhaust air vent recovery and discharge at safe height and Hydraulic Seal System for toxic components like TEAL etc. shall be provided.	In PBR Plant has air pollution control system like flare knockout pot, wastewater stripper, hydraulic seal system, etc. have been provided.
	The vents connected to the SBR process plant shall be connected to the existing flare.	SBR process vents are connected to the existing flare through knock out pot installed in plant area.

<table>
<tr><td>19.</td><td>Process emission like SO_2, NO_x, PM, VOCs etc. shall be controlled with the adequate air pollution control equipment (APCEs).</td><td>Stack emissions at PBR and SBR are monitored monthly through MoEF&CC approved laboratory. Summary of results for the period April’23 to Sep’23 are as below:

<table>
<tr><th rowspan="2">Parameter</th><th colspan="3">PBR</th><th>SBR</th></tr>
<tr><th>SO2 (PPM)</th><th>NOx (PPM)</th><th>PM (mg/Nm^3)</th><th>VOC (Styrene) (mg/Nm^3)</th></tr>
<tr><td>GPCB Limit</td><td>100</td><td>50</td><td>150</td><td>100</td></tr>
<tr><td>Max</td><td>2.45</td><td>18.36</td><td>5.29</td><td>11.55</td></tr>
<tr><td>Min</td><td>1.22</td><td>12.24</td><td>3.45</td><td>7.15</td></tr>
<tr><td>Avg</td><td>1.84</td><td>16.32</td><td>4.56</td><td>9.12</td></tr>
</table></td></tr>
<tr><td></td><td>These APCEs shall be operated efficiently and effectively to achieve the norms prescribed by the GPCB at stack / vent outlets.</td><td>The above results are complying with the norms given by GPCB which indicate that APCE provided in PBR and SBR plants are operating efficiently and effectively.</td></tr>
<tr><td>20.</td><td>Stacks / vents of adequate height as per the prevailing norms along with port holes and sampling facilities shall be provided.</td><td>Complied.</td></tr>
<tr><td>21.</td><td>The company shall install online monitoring system in the proposed plants with an arrangement to reflect the monitored data on the company’s server, which can be accessed by the GPCB on real time basis.</td><td>Online monitoring system for stack emission provided in PBR & SBR Plants with connectivity to CPCB /GPCB server.</td></tr>
<tr><td></td><td>In addition to this, the company shall also install online NO_x analyzers for the existing HRSG boilers. The real time data sharing shall be worked out in the consultation with the GPCB.</td><td>Online NOx analyzers have already been provided in existing HRSG stacks with real time connectivity to GPCB/CPCB server.</td></tr>
<tr><td>22.</td><td>The fugitive emission in the work zone environment shall be monitored. The emission shall confirm to the standards prescribed by the concerned authorities from time to time (e.g. Directorate of Industrial Safety & Health).</td><td>Workplace monitoring is done periodically for existing facilities including SBR and PBR plant.</td></tr>
<tr><td></td><td>Following steps shall be taken to reduce the fugitive emission of VOCs:
Provision of internal floating roof tanks with flexible double seal for storage tanks.</td><td>Storage Tanks in SBR & PBR plants are provided with internal floating roof with flexible double seal.</td></tr>
<tr><td></td><td>Provision of mechanical seals in pumps</td><td>Mechanical seals are provided in pumps/ compressors of PBR and SBR plant.</td></tr>
<tr><td></td><td>Regular inspection of floating roof seals and proper maintenance of floating roof seals for existing tanks.</td><td>Being complied. Regular inspection and preventive maintenance being done.</td></tr>
<tr><td></td><td>Preventive maintenance of valves and other equipment.</td><td>Being complied. Preventive maintenance is being done regularly.</td></tr>
<tr><td></td><td>Regular skimming of oil from separators / equalization basin in the ETP.</td><td>Skimmers are provided at oil separator and equalization tank in ETP. The separated oil is collected in Slop oil tank.</td></tr>
</table>

	Fugitive emission monitoring at regular intervals.	Fugitive emission monitoring done in PBR & SBR through Leak detection and repair program.
	Strengthening / maintain existing green belt.	Complied.
	Use of high grade gasket material for packing, provision of motor operated valves for critical services such as high vapor pressure components and chemicals.	High quality gaskets/packings are provided based on chemicals properties. Remote /motor /pneumatic operated valves are provided for critical services.
	Implementation of Leak Detection and Repair (LDAR) program using a portable VOC detection instrument.	LDAR program is implemented throughout the plant including SBR and PBR using portable VOC detection instruments.
	Monitoring dioxin and furan from the stacks of incinerators at a regular interval to close vigil on such emissions due to burning organo chlorine compounds, if any.	There is no incinerator in PBR / SBR plant handling halogenated compounds.
23.	Regular performance evaluation of the air pollution control systems shall be undertaken every year to check its adequacy, through credible institutes like L.D. College of Engineering, NPC or other such other institutes of similar repute, and its records shall be maintained and furnished to the GPCB from time to time.	Performance evaluation of air pollution control systems by external agencies is being carried out annually through environmental auditor appointed by GPCB and reports submitted.
24.	The company shall install and operate continuous ambient air quality monitoring station within the premises.	Continuous Ambient Air Quality Monitoring Station (CAAQMS) is installed within the plant.
	The location of the continuous ambient air quality monitoring station shall be fixed in consultation with the GPCB.	Location of CAAQMS is fixed by showing site to GPCB official and after getting their concurrence. A letter with respect to this site visit was also submitted to GPCB.
A.3	**HAZARDOUS / SOLID WASTE**	
25.	The company must strictly comply with the rules and regulations with regards to handling and disposal of Hazardous waste in accordance with the Hazardous Waste (Management, Handing and Trans boundary Movement) Rules 2008, as may be amended from time to time.	Hazardous waste generated from the PBR & SBR Plant is being managed as per the Hazardous waste and Other Waste (Management and Transboundary Movement) Rules, 2016 and authorization received from GPCB.
26.	Authorization from the GPCB must be obtained for collection / treatment / storage disposal of hazardous wastes.	Authorization for Hazardous wastes disposal is obtained from GPCB for SBR and PBR plants.
27.	The hazardous wastes shall be stored in separate designated hazardous waste storage facility with impervious bottom and leachate collection facility before its disposal.	Hazardous waste from SBR and PBR plant are stored in Central Hazardous Waste Storage Area which is developed as per CPCB guideline with impervious flooring, leachate collection facility and rain protection shelter.
28.	Spent Catalyst (Palladium or Carbon), Alumina Desiccant, Rubber Gel, Butadiene Popcorn Polymer, used oil shall be sold only to the registered recyclers.	Spent catalyst and used oil is sold to offsite recyclers/ re-processors having valid CCA of SPCB. Rubber Gel & Butadiene Popcorn Polymer (Furnace reactor residues and debris) are sent for coprocessing and incinerated in hazardous waste incinerator respectively. Alumina desiccants are non-hazardous waste and sold to recyclers.

29.	ETP sludge, Incinerator Ash etc. shall be sent to the secured landfill site for disposal	ETP sludge & incinerator ash of hazardous wastes incinerator are disposed at secured landfill site of Bharuch Enviro Infrastructure Limited (BEIL), Ankleshwar/Dahej.
30.	Oily cotton rags shall be either incinerated or sent to the secured landfill site for disposal depending on its characteristics.	Oily cotton rags generated from entire plant including SBR and PBR are disposed as per Authorization of GPCB.
31.	Discarded containers / barrels / bags / liners shall be either reused or sold only to the authorized recyclers after decontamination.	Each plant including SBR and PBR has developed dedicated drum decontamination facility. Discarded containers / barrels generated from respective plants get decontaminated (Labelling done on containers) and sold to actual users as per GPCB directives.
32.	The company shall further explore the possibilities and strive for reuse of hazardous wastes in co-processing.	M/s RIL Hazira is sending hazardous as well as nonhazardous waste to M/s Ambuja Cement Ltd Kodinar, Gujarat for co-processing **389.6 MT** of Hazardous waste sent for co-processing from RIL Hazira to M/s Ambuja cement Ltd. during reporting period.
A.4	**SAFETY**	
33.	Provisions of the Manufacture, Storage & Import of Hazardous Chemicals Rules, 1986 & Factories Act, 1948 shall be strictly compiled with.	Complied.
34.	Recommendations made in the Risk Assessment Study Report submitted by the project proponent shall be implemented.	All recommendations made in the risk assessment are complied with.
35.	A necessary precautionary measure shall be taken to avoid any kind of accident during storage and handling of toxic / hazardous chemicals.	Following safety measures have been adopted to avoid accidents at the site during storage and handling of toxic / hazardous chemicals: • Separate dyke area provided for the different products and storage areas. • Storage areas are separated from process areas and flammable materials. • Level indicators, trips & alarm systems • Adequate Fire protection systems are provided.
36.	All the materials shall be stored in optimum quantity and all necessary permissions in this regard shall be obtained (if required) before commencing the expansion activities.	All materials are stored only in required quantities matching with the production capacities and necessary permissions from PESO (Chief controller of explosive (CCOE)) Nagpur & Directorate Industrial safety and Health, Gujarat has been obtained for the same.
37.	Storage and use of hazardous chemicals shall be minimized to the extent possible.	Hazardous chemicals are stored only as per the requirement matching with the production capacities.
	and all necessary precautions shall be taken to mitigate the risk generated out of it	Necessary precautions are taken for safe storage / handling of hazardous / toxic chemicals as detailed in point no. 35.
	Storage of hazardous chemicals shall be in multiple small capacity tanks / containers instead of one single large capacity tank for safety purpose.	Hazardous chemical storage quantities are maintained only in minimum quantity as per requirement. The chemicals are stored in tanks of optimum size.

38.	During material transfer, spillages shall be avoided and garland drain be constructed to avoid mixing of accidental spillages with domestic wastewater or storm water.	Dedicated drainage network has been established in PBR & SBR plants to avoid mixing of plant effluent with storm water.
39.	All the storage tanks shall be fitted with appropriate controls to avoid any leakages. Bund / dyke walls shall be provided for storage tanks for Hazardous Chemicals.	Proper safety mechanisms including level indicators, level alarms, bund/dyke walls are provided on the storage tanks to avoid leakages / spillages & will be complied for upcoming facilities.
	Close handling system for chemicals shall be provided.	Raw materials from the storage tanks are transferred to the reactors in an automated manner with a closed loop system to avoid any manual exposure.
40.	Tie up shall be done with nearby health care unit for seeking immediate medical attention in the case of emergency, regular medical checkup of the workers and keeping its record etc.	Complied.
41.	Personal Protective Equipments shall be provided to workers and its usage shall be ensured and supervised.	Use of PPE's is compulsory for employees and contractors. This is being ensured regularly.
42.	First Aid Box and required antidotes for the chemicals used in the unit shall be made readily available in adequate quantity.	Complied
43.	Training shall be imparted to all the workers on safety and health aspects of chemicals handling.	The chemical handling related safety and health training is imparted to all workers. The level-1 and level-2 training is provided to the contract workers which includes the safe work practices related to safe chemical handling and use of PPEs. All RIL Hazira employees are imparted safety training through induction and refresher training on safe work practices, safe chemical handling and use of PPEs.
44.	Occupational health surveillance of the workers shall be done and its records shall be maintained.	Occupational health surveillance of the workers is done and its records are maintained.
	Pre-employment and periodical medical examination for all the workers shall be undertaken as per the Factories Act & Rules.	Pre-employment and periodical medical examination is carried out by OHC on a regular basis and records are maintained as per the Gujarat Factories Act & Rules.
45.	Handling and charging of the chemicals shall be done in such a manner that minimal human exposure occurs.	Raw materials from the storage tanks are transferred to the reactors in an automated manner with a closed loop system to avoid any human exposure.
46.	Transportation of hazardous chemicals shall be done as per the provisions of the Motor Vehicle Act & Rules.	Complied
A.5	**NOISE**	
47.	To minimize the noise pollution the following noise control measures shall be implemented:	These measures are ensured in PBR & SBR Plants by addressing the requirements during the design phase itself.
	• Selection of any new plant equipment shall be made with specification of low noise levels.	Low noise generating equipment have been selected in the design stage itself.

	• Manufacturers / suppliers of major noise generating machines / equipments like air compressors, feeder pumps, turbine generators, etc. shall be instructed to make required design modifications wherever possible before supply and installation to mitigate the noise generation and to comply with the national / international regulatory norms with respect to noise generation for individual units.	Low noise generating equipment have been selected in the design stage itself. Equipment meets the regulatory norms.
	• Regular maintenance of machinery and vehicles shall be undertaken to reduce the noise impact.	Regular maintenance of machinery and vehicles is undertaken
	• Noise suppression measures such as enclosures, buffers and / or protective measures shall be provided.	Noise suppression measures like acoustic enclosures are provided wherever required.
	• Employees shall be provided with ear protection measures like earplugs or earmuffs	PPEs are mandatory for use by everyone working in high noise areas.
	• Proper oiling, lubrication and preventive maintenance shall be carried out of the machineries and equipments to reduce noise generation.	Regular maintenance, oiling, lubrication of machinery and vehicles is undertaken to reduce noise generation.
	• Construction equipment generating minimum noise and vibration shall be chosen.	Units are already commissioned.
	• Ear plugs and / muffs shall be made compulsory for the construction workers working near the noise generating activities/ machines / equipment.	Units are already commissioned.
	• Vehicles and construction equipment with internal combustion engines without proper silencer shall not be allowed to operate.	Units are already commissioned.
	• Construction equipment meeting the norms specified by EP Act, 1986 shall only be used.	Units are already commissioned.
	• Noise control equipment and baffling shall be employed on generators especially when they are operated near the residential and sensitive areas.	Low noise generating generators are being used in the site.
	• Noise levels shall be reduced by the use of adequate mufflers on all motorized equipment.	Adequate mufflers as required, are provided on all motorized equipment.
48.	The overall noise level in and around the plant area shall be kept well within the prescribed standards by providing noise control measures including acoustic insulation, hoods, silencers, enclosures, vibration dampers etc. on all sources of noise generation.	Noise control measures such as acoustic hoods, silencers etc. are provided at high noise generating source within the plant. The ambient noise level monitoring is being carried out regularly.

	The ambient noise levels shall confirm to the standards prescribed under the Environment (Protection) Act and Rules. Workplace noise levels for workers shall be as per the Factories Act and Rules.	Maximum Noise level found at periphery of RIL HMD in the range of **55.8-69.1 dBA (Leq)** during daytime and **53.7- 65.6 dBA (Leq**) during night time with in reporting period **April'23-Sep'23** Noise levels are found well with-in the stipulated norms. Workplace noise levels are monitored and required precautions are taken to avoid exposure.
A.6	**ENERGY CONSERVATION**	
49.	The project proponent shall install energy efficient devices and appliances conforming to the Bureau of Energy Efficiency norms.	Energy efficient is one of the basis of design and devices have been provided in the plant like variable frequency drives etc.
50.	The energy audit shall be conducted at regular intervals and the recommendations of the audit report shall be implemented.	Energy audit done by third party for existing facilities including SBR and PBR plants and the recommendations are implemented.
51.	The project proponent shall implement the application of solar energy which shall be utilized as solar lighting for illumination of common areas, lighting of internal roads and passages in addition to utilization of solar water heating systems.	Use of solar energy is already explored and under approval stage.
52.	The transformers and motors shall have minimum efficiency of 85%.	Transformers have efficiency over 85%.
53.	Variable frequency drives shall be installed.	VFD's are installed in the PBR & SBR plants.
54.	Energy conservation measures shall include use of electronic lighting system, use of CFL tubes to minimize energy use, use of programmable timers for pumping system and lighting, water level controllers for water pumps, centralized cooling etc.	Energy conservation schemes are being implemented.
55.	Energy saving practices as follows shall be practiced:	
	• Constant monitoring of energy consumption and defining targets for energy conservation.	Departmental level targets have been fixed and energy consumption monitored against those targets.
	• Adjusting the settings and illumination levels to ensure minimum energy used for desired comfort level.	Being complied. LED bulbs are also used for lighting.
	• Use of solar cells for lighting	Being considered.
	• Use of solar water heater for canteen & washing area.	Already installed wherever possible.
	• Proper load factor shall be maintained by the unit.	Being complied
	• Provision of day light roof to utilize maximum natural light in the production plant instead of electrical lighting.	Day light roofs are provided at our Store and Warehouse areas.
	• Use of electronic ballast to save energy	Being complied
	• Automatic switching system for lighting & water tank pumping shall be used	Automatic switching system for lighting are provided at various areas of plant as well as at washrooms.

	• To the maximum extent possible and technically feasible, energy efficient equipment like motors, pumps, air conditioning systems shall be selected	Being complied.
	• Gravity flow shall be preferred wherever possible to save pumping energy	It is always thought of while taking any decision in this regard.
	• Promoting awareness on energy conservation	RIL Hazira plant has 73 BEE certified energy professionals.
	• Training to the staff on methods of energy conservation and to be vigilant for this.	Training is being imparted regularly by our Learning and Development dept.
A.7	**CLEANER PRODUCTION AND WASTE MINIMISATION**	
56.	The unit shall undertake the Cleaner Production Assessment study through a reputed institute / organization and shall form a CP team in the company. The recommendations thereof along with the compliance shall be furnished to the GPCB.	We have adopted World class technology, which minimizes wastes and gives maximum energy efficiency. RIL Hazira plant has carried out CP assessment by Gujarat Cleaner Production Cell. GCPC has issued certificate.
57.	The company shall undertake following waste minimization measures.	All these points are being done as a process / operation requirement.
	a. Metering and control of quantities of active ingredients to minimize waste	
	b. Reuse of by-products from the process as raw materials or raw materials substitutes in other process.	
	c. Use of automated and enclosed filling to minimize spillages	
	d. Use of close feed system into batch reactors.	
	e. Dry cleaning / mopping of floor instead of floor washing	
	f. Use of high-pressure hoses for cleaning to reduce wastewater generation.	
	g. Regular preventive maintenance for avoiding leakage, spillage etc.	
A.8	**GREEN BELT AND OTHER PLANTATION**	
58.	The unit shall develop green belt within premises as per the CPCB guidelines.	Complied. Around 123 ha of green cover provided within Hazira Petrochemical complex. Besides, payment also made to forest deptt for 50 Ha of plantation towards Green belt development / carbon sink enhancement on forest land of villages Suvali, Hazira & Bhatlai nearest to RIL Hazira.
	In addition to that, the unit shall take up adequate plantation on road sides and suitable open areas in the GIDC estate, nearby schools, gram panchayat areas and any other open areas in consultation with the GIDC / local bodies / GPCB and submit an action plan of plantation for next three years to the GPCB.	As per the request of village sarpanch, plantation has already been carried out in Junagam, Damka, Mora villages. The initiative is taken up as CSR activity on request from villages.

B.	**GENERAL CONDITIONS**

59.	In the event of failure of any pollution control system adopted by the unit, the unit shall be safely closed down and shall not be restarted until the desired efficiency of the control equipment has been achieved.	During the period **April'23-Sep'23**, no such failure of pollution control equipment has been observed.
60.	The company shall strictly follow all the recommendations mentioned in the Charter on Corporate Responsibility for Environment Protection (CREP) published by the Central Pollution Control Board, as may be applicable.	Complied
61.	Pucca flooring / impervious layer shall be provided in the work areas, chemical storage areas and chemical handling areas to minimize soil contamination.	Pucca flooring has been provided in all work areas, chemical storage areas and chemical handling areas as required.
62.	Leakages from the pipes, pumps shall be minimal and if occurs, shall be arrested promptly.	All pipes and material transfer systems are visually inspected at regular frequency and leaks are promptly identified and arrested.
63.	All the recommendations made in the EIA/EMP and other documents submitted by the project proponent shall be strictly implemented.	Recommendations of the EIA/EMP reports has been implemented.
64.	The project proponent shall also comply with any additional condition that may be imposed by the SEAC or the SEIAA or any other competent authority for the purpose of the environmental protection and management.	Noted
65.	No further expansion or modifications in the plant shall be carried out without prior approval of the MoEF/SEIAA, as the case may be. In case of deviations or alterations in the project proposal from those submitted to MoEF/SEIAA/SEAC for clearance, a fresh reference shall be made to the SEIAA / SEAC to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.	Noted
66.	The project authorities shall earmark adequate funds to implement the conditions stipulated by SEIAA as well as GPCB along with the implementation schedule for all the conditions stipulated herein.	Adequate funds have been allocated for implementing the conditions Stipulated by SEIAA/GPCB. Recurring expenditure incurred for the HMD complex to comply with the conditions stipulated by MoEF&CC / SEIAA as well as by GPCB during the reporting period is **Rs.29.57 Cr.**
	The funds so provided shall not diverted for any other purpose.	Noted.
67.	The applicant shall inform the public that the project has been accorded environmental clearance by the SEIAA and that the copies of the clearance letter are available with the GPCB and may also be seen at the Website of SEIAA/SEAC/GPCB. This shall be advertised within seven days from the date of the clearance letter, in at least two local newspapers that are widely circulated in the region, one of which shall be in the Gujarati language and the other in English. A copy	The public was informed by giving public notice in Gujarati and English newspaper.

	each of the same shall be forwarded to the concerned Regional Office of the Ministry.	
68.	It shall be mandatory for the project management to submit half-yearly compliance report in respect of the stipulated prior environmental clearance terms and conditions in hard and soft copies to the regulatory authority concerned, on 1st June and 1st December of each calendar year.	Six monthly compliance report is being submitted to MoEF&CC, RO, Gandhinagar regularly. Last compliance report was submitted vide our letter (696/31052023/HMD/MoEF&CC) dated 31/05/2023 sent through email at iro.gandhingr-mefcc@gov.in dated 01.06.2023
69.	The project authorities shall also adhere to the stipulations made by the Gujarat Pollution Control Board.	All the stipulations laid down by GPCB is being complied with. Refer **Annexure-V** for compliance of consent to operate.
70.	The project authorities shall inform the GPCB, Regional Office of MoEF and SEIAA about the date of financial closure and final approval of the project by the concerned authorities and date of start of the project.	Financial closure and project commencement information already provided in our earlier submission.
71.	The SEIAA may revoke or suspend the clearance, if implementation of any of the above conditions is not found satisfactory.	Noted.
72.	The above conditions shall be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act. 1986, Hazardous Wastes (Management, Handling) Rules, 2003 and the Public Liability Insurance Act, 1991 along with their amendments and rules.	Noted.
73.	The Environmental Clearance is valid for five years from the date of issue.	Noted.

Reliance Industries Limited – Hazira Manufacturing Division

Compliance status of Environment & CRZ clearance issued for setting up of a coal based Captive cogeneration Power Plant (CCPP) of 4 x 90 MW (360 MW) within the premises of Hazira Manufacturing Division (RIL-HMD) and associated Coal Jetty With a capacity of handling 3.5 MMTPA of coal & limestone in the Tapi estuary vide no SEIAA / GUJ / EC / 1(d) & 7(e) / 3 / 2015 dated 28.01.2015 and its amendment SEIAA / GUJ / EC / 1(d) & 7(e) / 584 / 2016 dated 28th Sep 2016 Status as on 30/09/2023.The project is commissioned and operational except coal jetty.

<table>
<tr><th>Sr. No.</th><th>Conditions of the Environment & CRZ clearance</th><th>Compliance of the conditions of the Environment & CRZ clearance</th></tr>
<tr><td colspan="3">A. Conditions</td></tr>
<tr><td colspan="3">A.1 SPECIFIC CONDITIONS:</td></tr>
<tr><td>1.</td><td>In terms of captive power generation within the RIL-HMD complex, at any given point of time, the total installed capacity of the complex shall not exceed 499 MW and operating power generation capacity of the complex shall not exceed 470 MW.</td><td>The plant being captive in nature supplies power only to the complex and the load never exceeds the limit of 470 MW. However this condition is not applicable now in view of EC No J-13012/5/2021-IA.I(T) dated 31.10.2022 regarding expansion of power generation capacity from 470 to 680 MW.
Jetty construction is yet to be started.
Dredging and shore protection activity completed. Power generation is given below.

<table><tr><th>Month</th><th>Total (MW)</th></tr><tr><td>April’23</td><td>315.3</td></tr><tr><td>May’23</td><td>315.4</td></tr><tr><td>June’23</td><td>306.8</td></tr><tr><td>July’23</td><td>317.0</td></tr><tr><td>Aug’23</td><td>317.1</td></tr><tr><td>Sep’23</td><td>320.7</td></tr></table></td></tr>
<tr><td>1A</td><td>Unit shall comply the emission standard mentioned in the notification by MoEF Vide no. S.O.3305(E) dated 07.12.2015</td><td>We are complying with the emission standards mentioned in CCA issued by GPCB and the monitoring reports are attached as Annexure-I for reference.</td></tr>
<tr><td>2.</td><td>The RIL shall strictly adhere to the provisions of the CRZ Notification, 2011 issued by the Ministry of environment and Forest, GOI.</td><td>Jetty construction is yet to be started. CRZ Notification provisions shall be followed during construction and operational phases.</td></tr>
<tr><td>3.</td><td>The RIL shall obtain all necessary clearance permissions from different Government Department / Agencies before commencing any construction activity related to the proposed project.</td><td>We comply with this condition.
Necessary clearances from GMB, DISH, Municipalities, notified area etc have been obtained for the CCPP. Jetty construction is yet to be started.</td></tr>
<tr><td>4.</td><td>The RIL shall prepare Safety/Disaster Management Plan and appoint safety officer to see compliance in handling of coal/liquid in this area.</td><td>The RIL has an established Safety/Disaster Management Plan for existing complex. The same has been revised and updated for CCPP.</td></tr>
<tr><td>5.</td><td>The RIL shall have to obtain necessary permission from the GMB/Government for jetty/port under Maritime Board Act, 1980.</td><td>Jetty construction is yet to be started.</td></tr>
<tr><td>6.</td><td>The RIL shall construct jetty in such way that there shall not be any impacts on ecology of the area.</td><td>Will be complied with when the jetty construction is initiated.</td></tr>
</table>

7.	The RIL shall carry out transportation and handling of the coal in such a way that there shall not be any impact of coal dust in nearby area.	We comply with this condition. Coal is being transported through dedicated trucks with proper covering. RIL HMD is transporting coal from nearby ports like Adani port.
8.	The RIL shall carry out simulation study for the proposed area considering the increase in the ship/barges traffic in the area, accidental shrinkage of barges/ships, due to proposed construction, covering the disaster/safety and environmental aspects and shall abide by the safety and environment protection measures emerges out of this study.	Jetty construction is yet to be started. Comprehensive Marine EIA had been carried out for this purpose during pre-monsoon (Feb-Mar-2013), monsoon (Oct-2013) and post monsoon (Jan-2014) and the recommendation shall be complied with. Simulation study is a part of marine EIA study conducted by NIO. Measures/ recommendation made in EMPs shall be complied with.
9.	The dredging material shall be disposed of in such a way that there shall not be any impacts on marine environment. In case of disposal of dredged material in deep sea, it shall be disposed of only after a model study for its disposal location, influence zone, its impact on marine environment, if any and mitigation measures suggested shall be complied with by the RIL	Dredging material is disposed in our low- lying land for filling purpose and it has not caused any adverse impact on the marine environment.
10.	The RIL shall have to maintain an up to date records for generation and disposal of the dredging material and it shall be submitted to the GMB and forest & Environment Department for every generation and disposal.	Dredging records submitted to GMB during construction period.
11.	The RIL shall strictly implement the measures suggested in the Comprehensive marine EIA report by the Nation Institute of Oceanography, Mumbai and suggested in the EIA report by NEERI, Nagpur for mitigation of likely adverse impact on coastal and marine environment.	We comply this condition. Recommendation given in MEIA, and terrestrial EIA studies are included in the design of the plant and implemented. For eg. ESP, covered conveyors, tall chimney, covered storage shed for coal, limestone injection system, etc.
12	No ground water shall be tapped for any purpose for the project requirement.	Water for construction was sourced from existing raw water ponds. No ground water was used for the project.
13	The RIL shall prepare and furnish the detailed Disaster Management Plan to the concerned offices including the District Authorities and Forest & Environment Department.	Disaster Management Plan (DMP) already prepared for existing plant and the same is extended for CCPP. The DMP has been submitted to DISH, Surat & GPCB. The same has also been submitted to MoEF&CC along with EIA reports.
14	The RIL shall prepare and regularly update their Local Oil Spill Contingency and Disaster Management Plan in consonance with the National oil spill and disaster contingency Plan and shall summit the same to the Department Forest & Environment after having it vetted through the Indian Coast Guard.	Oil Spill Contingency plan prepared and submitted to Indian coast guard for vetting Vide letter no RIL/HS/2016/06.
15	The RIL shall bear the cost of the external agency that may be appointed by this Department for supervision / monitoring of proposed activities.	Noted
16.	The RIL shall furnish the environmental audit report including the aspects on coastal environment, to this Department every year.	Marine environment monitoring is carried out for three seasons by MoEF&CC approved laboratory. Monitoring of marine environment

		will be carried out annually when the jetty is constructed.
A.2 CONSTRUCTION PHASE:		
17.	The RIL-HMD shall strictly ensure that no creeks or rivers are blocked due to proposed activities in Tapi Estuary.	No creeks or rivers are blocked due to dredging and shore protection activity carried out in Tapi Estuary.
18.	It shall be ensured that project activities do not lead to any shoreline changes. Periodic monitoring shall be carried out to assess the shoreline changes.	Necessary precaution for protection of shoreline has been taken. Monitoring of shoreline changes will be done after construction of jetty.
19.	It shall be ensured that due to the project activities. There is no adverse impact on the drainage of area.	Project activities have not impacted the drainage pattern of the area.
20.	The construction materials and debris shall be properly stored and handled to avoid negative impacts such as air pollution and public nuisances by blocking the roads and public passages.	The construction materials and debris were properly stored within premises. Debris disposed-off within our premises for filling purpose and construction materials like steel, wood, plastics, packaging etc sold as scrap.
21.	The construction debris and /or any other type of waste shall not be disposed of into the sea, creek or in the CRZ areas. The debris shall be removed from construction site immediately after the construction over.	No construction material or debris was disposed-off into the sea or creek or in CRZ area.
22.	Disposal of debris including the excavated material during construction phase shall not create adverse effect on neighboring communities and shall be disposed off taking the precautions for general safety and health aspects only at the approved sites with the approval of the competent authority.	The construction materials and debris were properly stored within premises. Debris has been disposed-off within our premises for filling purpose and construction materials like steel, wood, plastics, packaging etc has been sold as scrap. There was no adverse impact on neighboring community.
23.	Fly ash should be used as building material in the construction as per provisions of Fly Ash Notification under EPA.	Fly ash was used as a cement additive as per applicability.
24.	Only lead free paints shall be used in the project.	Lead free paints were used during this project.
25.	The construction camps shall be located outside the CRZ area and the construction labor shall be provided with the necessary amenities, including sanitation. Water supply, fuel etc. and it shall be ensured that the environmental conditions are not deteriorated by construction labor.	Construction labour camps were located outside CRZ area during construction activity of CCPP. Construction labours were provided necessary amenities. During the construction work of this project, environmental conditions were not deteriorated by construction labor.
26.	Structural design aspects in accordance the seismic zone shall be strictly adhered to.	Structural design of the CCPP has been carried out considering seismic zone of the area.
27.	Superstructure Shall be constituted with pre-cast / cast in-situ slab so far as possible. Water demand during construction should be reduced by use of curing agents, plasticizers and other best particles.	Super structure is constructed with pre-cast / cast in-situ slab wherever possible along with steel structure. Best practices as mentioned were followed during construction to reduce water demand.
28.	Construction of the proposed structures shall be undertaken meticulously conforming to the existing local and central rules and regulations including the Coastal Regulation Zone Notification, 2011 & its amendment. All the construction design/drawing relating to be the proposed construction activities must have	Construction of the proposed project has been carried out taking into consideration of all existing local and central rules.

	approvals of the concerned Government Department/Agencies.	
29.	The construction activities shall be carried out only under the constant supervision and guidelines of the institutes of the Nation repute.	The construction activities were carried out under the constant supervision of RIL project group and various institutes.
30.	During construction phase, domestic water requirement shall be met through the existing water supply system i.e. Singanpore weir. No ground water shall be tapped in any case for the project requirements during the construction phase.	Domestic water requirement was met through the existing water supply system i.e. Singapore weir. Ground water was not used for the construction activity.
31.	The diesel generator set, if any to be provided during the construction phase shall be of enclosed type and confirming to the EPA rules for air and noise emission standards.	Enclosed type DG sets provided which were conforming to the air and noise emission norms.
32.	Vehicles hired for bringing construction material at site should be in good conditions and confirm to applicable air and noise emission standards and should be operated only during non-peak hours.	Vehicles hired during construction activity were regularly monitored for noise and emission generation and only the vehicles conforming to air and noise emission standards were operated.
33.	The overall noise level in and around the jetty area shall be kept well within the standard by providing noise control measures including engineering controls on all sources of noise generation. The ambient noise level shall conform to the standard prescribed under the Environment (Protection) Act, 1986 & Rules.	Noise level monitoring is being done for existing complex and same is carried out for CCPP areas. Observed noise levels are found well within norms. The proposed modification of Jetty is yet to be carried out.

A.3 OPERATION PHASE		
A 3.1 WATER		
34.	There Shall be no water requirement for jetty operations and there shall be no industrial effluent generation as only solid cargo would be handled at proposed jetty.	Jetty construction is not yet started.
35.	The fresh water requirement for the proposed CCPP shall not exceed 48,000 KL/day (12,000 KL/day of DM water + 36,000 KL/day of cooling tower make up water).	The average freshwater requirement for the CCPP is **23,517 KL/day** during the reporting period.
	and freshwater requirement after proposed expansion for the RIL-HMD complex shall not exceed 1,64,200 KL/day which shall be obtained through the existing source of water supply from Singanpor weir.	Fresh water requirement for the RIL-HMD complex is **1,20,261 KL/day (26.7MGD)** for the reporting period which is found well below the limit of 1,85,564 KL/day. (As prescribed in the ECs granted in 2022).
	Necessary permission from the Narmada Water Resources, Water supply and Kalpsar Department shall be obtained for drawl of additional water after the proposed Expansion.	Necessary approval has been obtained from Narmada, Water Resources, water supply and Kalpsar dept of Govt of Gujarat. Water with drawl quantity regularly submitted to GPCB.
	Expansion. Metering of water shall be done and its records shall be maintained.	Metering of water withdrawal is being done and records also maintained.
	No ground water shall be tapped in any case for meeting the project requirement.	No ground water is used.

<table>
<tr><td>36.</td><td>The industrial effluent discharge from the RIL-HMD complex shall not exceed 55,200 KL/day after the proposed expansion.</td><td>Our average treated effluent discharge rate is 45,626 m3/day including CCPP and domestic sewage, for the period of April’23-Sep’23 which is well below the permissible limit .</td></tr>
<tr><td>37.</td><td>Boiler blow down-700 KL/day from the proposed CCPP shall be recycled back as cooling tower make up water about 100 KL/day of additional effluent from DM plant due to proposed CCPP shall be treated in the existing ETP. Cooling tower blow down – 19,700 KL/day shall be treated effluent of the complex and shall be discharged into the Tapi estuary through existing effluent disposal pipeline equipped with multiport diffuser.</td><td>Effluent recycling system for existing system has been implemented at the plant for which the low TDS (TDS <500 mg/l) effluent streams is segregated and treated. Treated effluent is recycled as cooling water make up and production of DM water. Effluent recycling for period of April’23-Sep’23 is: 10,680 m3/ day (total 19,54,441 m3 recycling during reporting period).
CCPP Boiler blow down is being recycled as cooling tower make up. Cooling tower blow down and DM plant effluent is being taken into existing ETP’s conditioning polishing tank and discharged to Tapi estuary through existing treated effluent disposal pipeline equipped with multiport diffuser.</td></tr>
<tr><td>38.</td><td>The ETP shall be operated regularly and efficiently so as to achieve the GPCB norms at the outlet.</td><td>The ETP is operated regularly and efficiently during reporting period. A summary of effluent monitoring results for the period April’23-Sep’23 is presented below:
<table>
<tr><th>Parameter</th><th>GPCB Limits</th><th>Avg</th><th>Min</th><th>Max</th></tr>
<tr><td>pH</td><td>6.5-8.5</td><td>7.4</td><td>7.2</td><td>7.7</td></tr>
<tr><td>TSS (mg/l)</td><td>100</td><td>16.5</td><td>14.0</td><td>19.0</td></tr>
<tr><td>O&G (mg/l)</td><td>10</td><td><1.8</td><td><1</td><td><2</td></tr>
<tr><td>COD (mg/l)</td><td>250</td><td>82</td><td>78</td><td>86</td></tr>
<tr><td>BOD (3 days 27^{o}C)</td><td>50</td><td>21.3</td><td>19.0</td><td>23.0</td></tr>
<tr><td>NH3-N (mg/l)</td><td>50</td><td>4.1</td><td>3.1</td><td>5.1</td></tr>
</table>
Detail Effluent monitoring data can be referred at Annexure-III.</td></tr>
<tr><td>39.</td><td>Guard ponds of adequate storage capacity shall be provided for storage of effluent in case of emergency maintenance of effluent discharge pipeline.</td><td>Multiple Holding tanks of sufficient capacity (~61,000 m3) have been provided. for storage of effluents in case of emergency maintenance of effluent discharge pipeline.
No emergency maintenance of effluent discharge pipeline carried out during reporting period April’23-Sep’23 .</td></tr>
<tr><td>40.</td><td>The unit shall provide metering facility at the inlet and outlet of the ETP and maintain the records of daily effluent generation and reuse and furnish it to the GPCB from time to time.</td><td>Metering facility is provided at the inlet & outlet of the ETP and records are maintained.</td></tr>
<tr><td></td><td>The unit shall also provide on line monitoring system for pH, TDS & TOC parameters at the outlet of the ETP.</td><td>Online pH, flow, TOC, COD, BOD and TSS analyzer are provided at treated effluent discharge line as per CPCB requirement.
Our treated effluent is discharged into Tapi estuary due to which norms of TDS is not applicable to us.</td></tr>
</table>

<table>
<tr><td>41.</td><td>The unit shall providing metering facility at inlets and outlets of the Collection Tank, maintain records.</td><td>Metering facility is provided at the inlet & outlet of the ETP and records are maintained.</td></tr>
<tr><td>42.</td><td>A proper logbook of ETP operation and also showing the quantity of effluent generated, reused / recycle, utilized in plantation / gardening etc. shall be maintained and furnished to the GPCB from time to time.</td><td>Logbook of ETP operation is maintained and furnished to GPCB as and when asked. Break up of existing treated effluent for the reporting period April’23-Sep’23 are as below:

<table><tr><th>Description</th><th>Effluent quantity (M3/day)</th></tr><tr><td>Treated Effluent Recycled to cooling water make up and for DM water generation</td><td>10680</td></tr><tr><td>Effluent Discharged</td><td>45626</td></tr><tr><td>Total Effluent Quantity</td><td>56306</td></tr></table></td></tr>
<tr><td>43.</td><td>Regular performance evaluation of the ETP shall be undertaken every year to check its adequacy, through credible institutes like L.D. Collage of Engineering, NPC or such other institute of similar repute, and its records shall be maintained.</td><td>Performance evaluation by external agencies is being carried out annually through environmental auditor appointed by GPCB and the records are maintained.</td></tr>
<tr><td>44.</td><td>The effluent disposal pipeline shall be monitored regularly by the company and it shall be ensured that there is no leakage from the pipeline.</td><td>Effluent disposal pipeline is being checked regularly by site maintenance department for leakages. Report is attached as Annexure VII. Walkthrough survey of the pipeline is done once in six months whereas thickness survey is done once in 3 Years. The effluent disposal line and adequacy of diffuser has also been thoroughly checked/studied by NIO in 2014.</td></tr>
<tr><td></td><td>In case of any such eventualities, the company shall immediately stop disposal through the pipeline and take the corrective measures.</td><td>No such eventualities happened during reporting period April’23-Sep’23.</td></tr>
<tr><td>45.</td><td>The post project environment monitoring through the reported institute / organization shall be carried out in order to assess the changes if any in the marine / estuarine environment due to disposal of effluent.</td><td>Marine environment monitoring was carried out for three seasons by MoEF&CC approved laboratory in 2017.No adverse impacts have been noticed after implementation of this project</td></tr>
<tr><td>46.</td><td>The unit shall join and participate financially and technically for any common environment facility / infrastructure as and when the same is taken up either by the GIDC or GPCB or any such authority created for this purpose by Govt. / GIDC.</td><td>Noted.</td></tr>
<tr><td>47.</td><td>Surface run off from the jetty shall be adequately managed. To avoid oil, SS and coal dust entering the estuarine environment, dry sweeping shall be adopted at the jetty and washing shall be avoided.</td><td>Jetty construction is yet to be started.</td></tr>
<tr><td colspan="3">A.3.2 AIR</td></tr>
</table>

<table>
<tr><td>48.</td><td>Imported Coal to the tune of 8,575.0 TPD shall be used as a fuel in the proposed CCPP.</td><td>During reporting period average coal consumption at CCPP is 4,472 TPD. Month wise coal consumption is as follows:<table><tr><th>Month</th><th>Coal Consumption (MT)</th></tr><tr><td>April’23</td><td>140344</td></tr><tr><td>May’23</td><td>143141</td></tr><tr><td>June’23</td><td>136104</td></tr><tr><td>July’23</td><td>141251</td></tr><tr><td>Aug’23</td><td>133256</td></tr><tr><td>Sep’23</td><td>124310</td></tr></table></td></tr>
<tr><td>49.</td><td>There shall be no use of fuel and hence there shall be no flue gas emission the proposed coal handling jetty.</td><td>Jetty construction is yet to be started.</td></tr>
<tr><td>50.</td><td>Height of flue gas stacks attached to the CFBC boilers (5 nos. working and 01 no. standby) shall be minimum 220 meters as proposed.</td><td>Height of flue gas stacks is 220 meters.</td></tr>
<tr><td>51.</td><td>High efficiency Electrostatic Precipitators (ESPs) shall be installed as air pollution control system for the CFBC Boilers, and it shall be operated efficiency to achieve the norms prescribed by the GPCB at the stack outlet.</td><td>High efficiency Electrostatic Precipitators (ESPs) are installed as air pollution control system for the CFBC Boilers. CFBC boilers stacks monitoring done on regular basis. Results are tabulated below:<table><tr><th>Parameter mg/ Nm3)</th><th>GPCB Limits</th><th>Avg.</th><th>Min</th><th>Max</th></tr><tr><td>PM</td><td>50</td><td>5.8</td><td>0.9</td><td>10.3</td></tr><tr><td>SO2</td><td>600</td><td>210.9</td><td>48.1</td><td>544.5</td></tr><tr><td>NOX</td><td>300</td><td>196.8</td><td>145.9</td><td>257.2</td></tr><tr><td>Hg</td><td>0.03</td><td>BDL</td><td>BDL</td><td>BDL</td></tr></table>ESPs are operated efficiency and regularly. Detail CCPP Stack emission monitoring data can be referred at Annexure-I.</td></tr>
<tr><td></td><td>There shall be provision of one extra field in each ESP to ensure that even though one field goes out of order, the efficiency of the ESP is not affected.</td><td>One extra field in each ESP has been provided.</td></tr>
<tr><td>52.</td><td>An arrangement shall be made that in case of total failure of the ESP and if the ESP is not recharged within 10 minutes, the ID fan and consequently the boiler shall be tripped.</td><td>Necessary interlocks are provided.</td></tr>
<tr><td>53.</td><td>Online monitoring system shall be installed on the boiler stacks to monitor PM, SO2, & NOx concentration in the flue gas emission.</td><td>Online analyzers for PM, SO2 & NOx have been installed on all CCPP stacks.</td></tr>
<tr><td></td><td>This online monitoring system shall be interlocked with plant DCS system in such a manner that if concentration of particulate matter in flue gas emission exceeds 50mg/Nm3, utilization of boiler capacity shall reduce accordingly in order to bring down the particulate matter concentration below the 50 mg/Nm3.</td><td>Standard Operating Procedure, is in place for complying this condition and interlocks are provided</td></tr>
</table>

	An arrangement shall also be done for reflecting the online monitoring result on the company's server, which can be assessable by the GPCB on real time basis.	Real time data of CCPP emission are transmitted to CPCB /GPCB server.
54.	The company shall prepare schedule and carry out regular preventive maintenance of mechanical and electrical parts of ESPs and assign responsibility of preventive maintenance to the senior officer of the company.	Regular preventive maintenance scheduled in SAP system and responsibility is also assigned for preventive maintenance activities.
55	The fugitive emission in the work zone environment shall be monitored. The emission shall conform to the standards prescribed by the concerned authorities from time to time (e.g. directors of Industrial safety & Health). Following indicative guidelines shall also be followed to reduce the fugitive emission.	Workplace monitoring is done periodically for existing facilities including CCPP. Occupational exposure limit is compared against ACGIH (American Conference of governmental industrial hygienist) standard.
1)	All handling & transport of coal shall be exercised through covered coal conveyors only.	Covered coal conveyors are installed in CCPP and handling & transportation is being carried out through this covered conveyor.
2)	Enclosure shall be provided at coal loading and unloading operations.	Enclosures are also provided at coal unloading and loading operations.
3)	Water Shall be sprinkled on coal stock piles periodically to retain some moisture in top layer and while compacting to reduce the fugitive emission.	Water sprinkler systems are also installed at coal storage yard.
4)	All transfer point shall be fully enclosed	Covered coal conveyors are provided in the CCPP including the transfer points.
5)	Adequate dust suppression/extraction system at crusher house as well as for the coal stock yard shall be provided to abate dust nuisance.	Dust suppression/extraction system at crusher house as well as for the coal stock yard are provided.
6)	Accumulated dust on the ground and other surfaces shall be removed /sweep regularly and water the area after sweeping.	Regular housekeeping is being done to keep the area dust free.
7)	Internal roads shall be either concreted or asphalted or paved properly to reduce the fugitive emission during vehicular movement.	Internal roads are made asphalted properly to reduce the fugitive emission during vehicular movement.
8)	Air borne coal dust shall be controlled with water sprinkles at suitable location in the plant.	DFSS (Dry Fogging Spray System) is provide at coal unloading area and at coal storage shed sprinkling system is provided at suitable locations.
9)	Coal Shall be conveyed by piped conveyer system from jetty to plant. Alternatively, coal shall be conveyed through dumpers to the yard from nearby jetties of M/s Adani or Essar	Construction of jetty is yet to be initiated
10)	Fly ash shall be transported through closed/covered trucks only.	Fly ash is being transported through closed/covered trucks and bulkers only.
11)	All trucks shall be properly covered at top and bottom with perfect sealing of plastic / tarpaulin sheets.	Coal transport trucks are properly covered with tarpaulin.
12)	A green belt shall be developed all around the plant boundary, jetty area, office and also	A green belt area is being developed around the plant boundary areas.

<table>
<tr><td></td><td>along the roads to mitigate fugitive & transport dust emission.</td><td></td></tr>
<tr><td>13)</td><td>All regularly used roadways around the site must be swept daily with tank mounted road sweeper and washed by a truck mounted cart.</td><td>Sweeping activities are being done manually and road sweeping machine services are being hired.</td></tr>
<tr><td>14)</td><td>Regular cleaning of roads and removal of the accumulated dust from roadsides</td><td>Regular cleaning of roads is being done for CCPP.</td></tr>
<tr><td>15)</td><td>The storage yard shall be covered with screens / wall of at least 7 to 8 m height on three sides.</td><td>The Coal storage yard is fully covered/enclosed from all sides with walls of more than 8-meter height from all sides.</td></tr>
<tr><td>56.</td><td>Third party performance evaluation of the air pollution control systems including ESP shall be carried out at least once in a year to check its performance and efficiency through a reputed institute / organization like NPC, L.D. college of engineering Ahmedabad or such other institute of similar repute, and its records shall be maintained.</td><td>Performance evaluation of air pollution control systems by external agencies is being carried out annually through environmental auditor appointed by GPCB.</td></tr>
<tr><td>57.</td><td>Regular monitoring of ground level concentration of SO2, NOx, PM10 and PM2.5 shall be carried out in the impact zone and its record shall be maintained.

Ambient air quality levels shall not exceed the standards stipulated by the GPCB. If at any stage these levels are found to exceed the prescribed limits, necessary additional control measures shall be taken immediately</td><td>Regular Ambient air quality monitoring is done.
A Summary of the Ambient Air Quality (AAQ) monitoring results of April-23’-Sep-23’ is as below:
<table>
<tr><th>Parameter</th><th>Limits</th><th>Avg</th><th>Min</th><th>Max</th></tr>
<tr><td>PM10 (ug/m3)</td><td>100</td><td>58.9</td><td>38.0</td><td>78.0</td></tr>
<tr><td>PM2.5 (ug/m3)</td><td>60</td><td>19.0</td><td>8.8</td><td>28.2</td></tr>
<tr><td>SO2 (ug/m3)</td><td>80</td><td>20.2</td><td>11.7</td><td>28.1</td></tr>
<tr><td>NO2 (ug/m3)</td><td>80</td><td>26.7</td><td>16.2</td><td>36.2</td></tr>
<tr><td>NMHC (ug/m3)</td><td>-</td><td>BDL</td><td>BDL</td><td>BDL</td></tr>
<tr><td>Benzene (ug/m3)</td><td>-</td><td>3.7</td><td>2.6</td><td>4.8</td></tr>
</table>
Details of AAQ &CAAQMS data can be referred as Annexure-II.</td></tr>
<tr><td></td><td>The location of the station and frequency of monitoring shall be decided in consultation with the GPCB.</td><td>The site has established 7 AAQ monitoring stations within and outside the petrochemical complex based on the mathematical modeling studies carried out by NEERI considering wind direction and the maximum ground level concentration. An intimation letter to this effect was submitted to GPCB on 03.06.1992.</td></tr>
<tr><td>58.</td><td>The company shall install and operate continuous ambient air quality monitoring station within premises. The location of the continuous ambient air quality monitoring station shall be fixed in consultation with the GPCB.</td><td>Continuous Ambient Air Quality Monitoring Station (CAAQMS) is installed within the existing plant. Details of CAAQMS data can be referred as Annexure-II
Location of CAAQMS is fixed after showing site to GPCB official and after getting their concurrence. A letter with respect to this site visit was also submitted to GPCB.</td></tr>
<tr><td colspan="3">A 3.3 SOLID WASTE / HAZARDOUS:</td></tr>
<tr><td>59.</td><td>The company shall strictly comply with the rules and regulations with regards to handling and disposal of Hazardous waste in accordance with the Hazardous Waste</td><td>Used Oil, discarded containers and Oily cotton rags etc. are generated as Hazardous waste and these wastes are disposed off as per ‘Authorization’ granted under Hazardous and</td></tr>
</table>

<table>
<tr><td></td><td>(Management, Handling and Transboundary Movement) Rules 2008, as may be amended from time to time. Authorization from GPCB shall be obtained for collection/treatment/storage/disposal of hazardous wastes.</td><td>Other Wastes (Management & Transboundary Movement), Rules 2016 by GPCB.
Amended Authorization for CCPP is also obtained.</td></tr>
<tr><td>60.</td><td>Hazardous waste shall be packed and stored in separate designated hazardous waste storage facility with impervious bottom and leachate collection facility, before its disposal.</td><td>Hazardous waste from CCPP is stored at designated location with impervious bottom as interim storage. This waste is shifted at regular interval to Central Hazardous Waste Storage Area which is developed as per CPCB guideline with impervious flooring, leachate collection facility and rain protection shelter.</td></tr>
<tr><td>61.</td><td>Used oil shall be sold only to the registered recyclers / refiners.</td><td>Used oil is sold to offsite recyclers/ re-processors approved by MoEF&CC having valid consent of GPCB /SPCB.</td></tr>
<tr><td>62.</td><td>The company shall make necessary arrangements for disposal of municipal solid wastes as per the provisions of the Municipal Solid Wastes (Management and Handling) Rules, 2000 as amended from time to time and no waste shall be released to sea / creek or CRZ area in any case.</td><td>Municipal Solid wastes are now being managed as per Solid waste Rules, 2016.Solid Wastes such as office waste, canteen wastes are being properly collected and disposed.</td></tr>
<tr><td>63.</td><td>The discarded containers / barrels /bags / liners shall be sold only to the registered recycler after decontamination.</td><td>Discarded containers / barrels generated from CCPP get decontaminated at designated facility and thereafter sold to actual users as per GPCB/SPCB directives.</td></tr>
<tr><td>64.</td><td>For storage of fly ash, closed silos of adequate capacity shall be provided. No ash pond shall be constructed in the project.</td><td>3 Nos of Storage silo for Fly Ash (1600 MT capacity each) and 1 Storage Silo for Bed Ash (1600 MT) are installed. Ash pond has not been constructed in CCPP.</td></tr>
<tr><td>65.</td><td>Ash from silos shall be transported through closed tankers for utilization by cement/ construction agencies.</td><td>Ash from the silos are transported through Cement bulkers / covered trucks.</td></tr>
<tr><td>66.</td><td>The unit shall strictly comply with the Fly Ash Notification under the EPA, and it shall be ensured that there is 100% utilization of ash to be generated from the unit.</td><td>Fly Ash notification is being complied at CCPP. Ash utilization data (100% utilization) for the period of April-23’-Sep-23’ is:

<table><tr><th>Month</th><th>Total ash utilization quantity (MT)</th></tr><tr><td>April’23</td><td>16840.75</td></tr><tr><td>May’23</td><td>22316.28</td></tr><tr><td>June’23</td><td>32915.85</td></tr><tr><td>July’23</td><td>28968.654</td></tr><tr><td>Aug’23</td><td>31089.86</td></tr><tr><td>Sep’23</td><td>20751.55</td></tr></table></td></tr>
<tr><td colspan="3">A 3.4 SAFETY:</td></tr>
<tr><td>67.</td><td>The proposed jetty shall be equipped with a comprehensive fire protection system. The firefighting equipments shall be provided as per the requirement of the Gujarat Factories Rules, 1963.</td><td>Jetty construction is yet to be started.</td></tr>
</table>

68.	Fire protection system based on National Fire Protection Association (NFPA) approved guidelines shall be provided. It shall consist of fire hydrant system all-round the plant area and storage yards, high velocity water spray system for transformers, automatic fire detection and alarm, manual fire alarm system, portable fire extinguishers, adequate capacity fire water storage tanks etc.	Adequate Fire protection systems consist of fire hydrant system all-round the plant area and storage yards, Nitrogen spray system for transformers have been provided. Automatic fire detection and alarm, manual fire alarm system, portable fire extinguishers, adequate capacity fire water storage tanks etc. installed.
69.	Recommendation made in the Risk Assessment study report submitted by the project proponent shall be implemented.	All recommendations made in the risk assessment are complied with.
70.	Necessary emergency lighting system along with emergency power back up system shall be provided.	Emergency power back up system and emergency lighting systems are provided
71.	Personal Protective Equipment shall be provided to worker and its usage shall be ensured and supervised.	Personal Protective Equipment are provided to workers and employees based on work and s being ensured regularly.
72.	First Aid Box and required Antidotes for the chemicals used in the unit shall be made readily available in adequate quantity at all the times.	First Aid Box and required antidotes are available at the site.
73.	Training shall be given to all workers on safety and health aspects of handling chemicals.	The chemical handling related safety and health training is imparted to all workers on RIL role and all contractor workers as well. The level-1 and level-2 training is provided to the contract workers which includes the safe work practices related to safe chemical handling. All RIL Hazira employees are imparted safety training through induction and refresher training on safe work practices, safe chemical handling.
74.	Occupational health surveillance of the workers shall be carried out on a regular basis and records shall be maintained as per the Factories ACT and Rules. Pre-employment and periodical medical examination for all workers shall be undertaken as per statutory requirement.	Occupational health surveillance of the workers is done, and its records are maintained. Pre-employment and periodical medical examination is carried out by OHC on a regular basis and records are maintained as per the Gujarat Factories Act & Rules
75.	Tie up shall be done with nearby health care unit for seeking immediate medical attention in case of emergency, regular medical checkup of the worker and keeping its record etc.	RIL Hazira has tie up with Surat's leading hospitals such as BAPS-Pramukh Swami Hospital, Mehta's Seventh Day Adventist Mission Hospital, Surat and Bankers hospital for immediate medical attention. Periodical medical checkup done for the RIL employees as well as contractors' workers and records maintained for existing facility.
76.	The projects management shall prepare a comprehensive Disaster Management Plan (DMP) for the project as per the guidelines from Directorate of Industrial Safety and Health. Detailed DMP prepared shall be implemented to bring down risk involved / hazards/ accidents as low as reasonably practicable.	Safety/Disaster Management Plan was prepared for the existing complex, and it is updated for CCPP.

77.	All transporting routes within the premises shall have paved roads.	All roads are paved within complex.
A 3.5 NOISE :		
78. 1)	To minimize the noise pollution the following noise control measures shall be implemented: Selection of any new plant equipment shall be made with specification of low noise levels.	Low noise generating equipment have been selected in the design stage itself.
2)	Manufactures / suppliers of major noise generating machines / equipment like air compressors, feeder pumps, turbine generators, etc. shall be instructed to make required design modification wherever possible before supple and installation to mitigate the noise generation and to comply with the national / international regulatory norms with respect to noise generation for individual units.	Necessary confirmation taken from suppliers for steam turbine generator, pumps, and compressors etc for noise level of equipment. The same is monitored as a part of condition monitoring.
3)	Regular maintenance of machinery and vehicles shall be undertaken to reduce the noise impact.	Regular maintenance of machinery and vehicles is undertaken to maintain noise levels.
4)	Noise suppression measures such as enclosures, buffers and /or protective measures shall be provided.	Noise suppression measures like acoustic enclosures are provided wherever required.
5)	Employees shall be provided with ear protection measures like earplugs or earmuffs.	PPE are mandatory for use by everyone working in high noise areas.
6)	Proper oiling, lubrication and preventive maintenance shall be carried out of machineries and equipments to reduce noise generation.	Regular maintenance, oiling, lubrication of machinery and equipment is undertaken to reduce noise generation.
7)	Construction equipment generating minimum noise and vibration shall be chosen.	Construction equipment generating low noise and vibration were chosen during the erection of the plant.
8)	Ear plugs and/muffs shall be made compulsory for the construction workers working near the noise generating activities / machines / equipment.	PPE like earmuffs/plugs are mandatory for use by everyone working in high noise areas
9)	Vehicles and construction equipment with internal combustion engines without proper silencer shall not be allowed to operate.	Vehicles and construction equipment with internal combustion engines without proper silencer were not allowed to operate during the erection of the plant.
10)	Construction equipment meeting the norms specified by EP Act, 1986 shall only be used.	Construction equipment meeting the EP Act norms were used during the erection of the plant.
11)	Noise control equipment and baffling shall be employed on generators especially when they are operated near the residential and sensitive areas.	Low noise generating generators are being used in the site.
12)	Noise levels shall be reduced by the use of adequate mufflers on all motorized equipment.	Mufflers are provided on all motorized equipment.

79.	The overall noise level in and around the plant area shall be kept well within the prescribed standards by providing noise control measures including acoustic insulation, hoods, silencers, enclosures vibration dampers etc. on all sources of noise generation.	Noise control measures such as acoustic hoods, silencers etc. are provided at high noise generating source with-in the plant. The ambient noise level monitoring has been carried out on monthly basis in existing complex and in the CCPP area at eight locations during day and nighttime.
	The ambient noise levels shall confirm to the standards prescribed under the environment (Protection) Act and Rules. Workplace noise levels for workers shall be as per the Factories Act and Rules.	Noise level observed at periphery of RIL HMD are in the range of **55.8-69.1 dBA (Leq)** during daytime and **53.7-65.6 dBA (Leq**) during nighttime within reporting period **April'23-Sep'23**. Noise levels are found well with-in the stipulated norms. The above results also conform the effectiveness of Noise control measures taken.
A 3.6 ENERGY CONSERVATION :		
80.	The project proponent shall install energy efficient devices and appliances confirming to the Bureau of Energy Efficiency norms.	Energy efficient devices have been provided in the plant like variable frequency drives etc
81.	The energy audit shall be conducted at regular intervals and the recommendations of the audit report shall be implemented.	Energy audit done by third party for existing facilities and the recommendations are implemented. Same will be done for CCPP in future.
82.	The project proponent shall implement the application of solar energy which shall be utilized as solar lighting for illumination of common areas, lighting of internal roads and passages in addition to utilization of solar water heating systems.	Use of solar energy is already started. Further usage is being explored and under approval stage.
83.	The transformers and motor shall have minimum efficiency of 85%.	Transformers have efficiency over 85%.
84.	Variable frequency drivers shall be used.	VFD's are installed in the CCPP.
85.	Energy conservation measures shall include use of electronic lighting system, use of CFL tubes to minimize energy use, use of programmable timers for pumping system and lighting, water level controllers for water pumps, centralized cooling etc.	Energy conservation schemes are implemented such as LED lighting, level controller, flow controller etc in all plants and other energy conservation projects are being implemented.
86.	Energy saving practices as follow shall be practiced:- **1)** Constant monitoring of energy consumption and defining targets for energy conservation. **2)** Adjusting the settings and illumination levels to ensure minimum energy used for desired comfort level. **3)** Use of solar cells for lighting. **4)** Use of solar water heater for canteen & washing area. **5)** Proper load factor shall be maintained by the unit. **6)** Provision of daylight roof to utilize maximum natural light in the production plant instead of electrical lighting. **7)** Use of electronic ballast to save energy.	1) Departmental level targets have been fixed and energy consumption monitored against those targets. 2) Being complied. 3) LED bulbs are also used for lighting 4) Our canteen and Guest house are equipped with solar water heater. 5) Being complied. 6) Day light roofs are provided at our Store and Warehouse areas. 7) Being complied

	8) Automatic switching system for lighting & water tank pumping shall be used. **9)** To the maximum extent possible and technically feasible, energy efficient equipment like motors, pumps, air conditioning systems shall be selected. **10)** Gravity flow shall be preferred wherever possible to save pumping energy. **11)** Promoting awareness on energy conservation. **12)** Training to the staff on methods of energy conservation and to be vigilant for this.	8) Automatic switching system for lighting are provided at various areas of plant as well as at washrooms. 9) Being complied. 10) These aspects are given due consideration during design stage. 11) RIL Hazira plant has 73 BEE certified energy professionals. 'Energy Conservation Day' and other occasions are observed with befitting programmes to spread awareness. 12) Training is being imparted regularly by our Learning and Development dept and external trainings also imparted.
A 3.7 WASTE MINIMIZATION & CLEANER PRODUCTION:		
86.	The unit shall undertake the Cleaner Production Assessment study through a reputed institute / organization and shall form a CP team in the company. The recommendations thereof along with the compliance shall be furnished to the GPCB.	We have adopted World class technology, which generates low wastes and gives maximum energy efficiency for existing plants and Same is compiled for CCPP. RIL Hazira plant has carried out CP assessment by Gujarat Cleaner Production Cell. GCPC has issued a certificate.
87.	The company shall undertake following waste minimization measures: **a)** Metering and control of quantities of active ingredients to minimize waste.	a) All active ingredients are metered at all the plants. All hazardous wastes are metered at the time of generation.
	b) Reuse of by-product from the process as raw materials or raw materials substitutes in other process.	Productive management of waste residue streams in PTA plant, SS powder recovery resulting in reuse of solid waste, Recovery of CO2 emission etc. Reuse of Bio-sludge at CCPP started.
	c) Use of automated and enclosed filling to minimize spillages.	Automated and enclosed filling is provided at all the plants.
	d) Use of close feed system into batch reactors.	Closed feed systems are installed for existing plants and CCPP.
	e) Dry cleaning / mopping of floor instead of floor washing.	Being complied
	f) Use of High-pressure hoses for cleaning to reduce waste water generation.	High pressure hoses used for cleaning and other measures also taken in plants for reduction of effluent.
	g) Regular preventive maintenance for avoiding leakage, spillage etc.	Regular preventive maintenance is carried out as per internal systems.
A 2.7 GREEN BELT:		
89.	The RIL-HMD shall develop and maintain green belt around the jetty area, office as well as internal and approach roads as proposed. Native and fast growing species shall be planted in green belt.	Plant species are selected for existing plant as per CPCB guidelines

90.	The unit shall develop and maintain green belt within premises as per the CPCB guidelines.	Trees have been planted through-out the periphery of the complex as well as wherever open spaces are available.
	In addition to that, the unit shall take up adequate plantation on road sides and suitable open areas in the Hazira industrial area, nearby schools, gram panchayat areas and any other opens areas in consultation with local bodies / GPCB and submit an action plan of plantation for next three years to the GPCB.	As per the request of village sarpanch, plantation has already been carried out in Junagam, Damka, Mora villages.
SPECIFIC CONDITIONS		
91.	In the event of failure of any pollution control system adopted by the unit, the unit shall be safety closed down and shall not be restarted until the desired efficiency of the control equipment has been achieved.	No such failure event had happened during reporting period at CCPP.
92.	The company shall strictly follow all the recommendations mentioned in the Charter on Corporate responsibility for Environment Protection (CREP) published by the Central Pollution control board, as may be applicable.	Six monthly CREP compliance for existing unit including CCPP is submitted to GPCB Gandhinagar.
93.	All issues raised during the Public hearing shall be addressed comprehensively.	Noted. Issues raised during public hearing have been addressed appropriately.
94.	The RIL-HMD shall have to contribute financially for taking up the socio-economic upliftment activities in this region in consultation with the Forest and Environment Department and the district Collector / District Development Officer.	RIL-HMD has taken up many activities for the upliftment of nearby community. The same has been continued today by 'Reliance Foundation' not only in our area but for entire Nation.
95.	The RIL shall ensure that the Corporate Social Responsibility (CSR) activities shall be carried out on need base of local people.	RIL-HMD has taken up many activities for the upliftment of nearby community. The same has been continued today by Reliance Foundation not only in our area but for entire Nation.
96.	A separate Environment Management cell equipped with full-fledged laboratory facilities and qualified personnel shall be created for environmental monitoring and management during construction and operational phases of the project.	A separate Environment Cell headed by Environment Head with environment qualification and 20 plus year experience. The cell is supported by qualified Environment professionals (Env. Engg). Environment Head report to Site President. Environmental monitoring and analysis done in laboratory. Regular rounds were taken during construction and operational phase also regularly compliances ensured by environment cell personals.
	A separate budget shall be earmarked annually for this purpose and the details shall be furnished to various regulatory authorities from time to time.	Sufficient funds are earmarked every year for environmental monitoring and analysis. Expenditure during the reporting period is **Rs.29.57 crore.**

97.	A separate budget shall be earmarked for environmental management and socio-economic activities and details thereof shall be furnished to the Forest and Environment Department, SEIAA as well as MoEF& GOI. The details with respect to the expenditure from this budget head shall also be furnished.	Adequate funds have been allocated for implementing environmental management and socio-economic activities. Expenditure incurred to comply with the conditions stipulated by MoEF&CC as well as by GPCB during the reporting period is Rs**. 29.57 crore.**
98.	An Environmental Report indicating the changes, if any, with respect to the baseline environmental quality in the coastal and marine environment shall be submitted every year by the RIL-HMD to the Forest & Environment Department as well as to the SEIAA.	Marine environment monitoring is carried out for three seasons. Analysis is completed and report received from MoEF&CC approved agency. No adverse impacts are noticed after implementation of this project.
99.	The RIL-HMD shall provide adequate funds for environment protection. The funds earmarked for environment protection measures shall be maintained, in a separate account and there shall be no diversion of these funds for any other purpose.	Funds allocated for environmental management is used only for that purpose.
100	All the recommendation made in the EIA/EMP and other document submitted by the project proponent shall be strictly implemented.	Recommendations of the EIA/EMP reports has been implemented during project execution and operational phase.
101	The RIL-HMD shall regularly submit the half-yearly compliance report on the conditions stipulated in hard and soft copies to the regulatory authorities concerned, on 1st June and 1st December of each calendar year.	Six monthly compliance reports are being submitted to MoEF&CC, Gandhinagar regularly.
102.	No further expansion or modification or development likely to cause environmental impacts shall be carried out without obtaining prior clearance from the concerned authority.	Noted
103.	Any other condition that may be stipulated but the SEIAA / SEAC / FOREST & Environment Department from time to time for environmental protection / management purpose shall have to be complied with by the RIL-HMD.	Noted
104.	The project authorities shall earmark adequate funds to implement the condition stipulated by SEIAA as well as GPCB along with the implementation schedule for all the conditions stipulated by SEIAA as well as GPCB along with the implementation schedule for all the conditions stipulated herein. The funds so provided shall not be diverted for any other purpose.	Adequate funds have been allocated for implementing environmental conditions stipulated in SEIAA/GPCB clearances. Expenditure incurred to comply with the conditions stipulated by MoEF&CC as well as by GPCB during the reporting period is Rs**. 29.57crore.**
105.	The applicant shall inform the public that the project has been accorded environmental clearance by the SEIAA and that the copies of the clearance letter are available with the GPCB and may also be seen the website of SEIAA/ SEAC/ GPCB. This shall be advertised within seven days from the date of	Already published in Local News Papers. Complied with.

	the clearance letter, in at least two local newspaper that are widely circulated in the region, one of which shall be in Gujarati language and the other in English. A copy of the same shall be forwarded to the concerned Regional Office of the Ministry.	
106.	It shall be mandatory for the project management to submit half-yearly compliance report in respect of the stipulated prior environmental clearance terms and conditions in hard and soft copies to the regulatory authority concerned, on 1st June and 1st June and 1st December of each calendar year.	Six monthly compliance reports are being submitted to MoEF&CC RO, Gandhinagar regularly.
107.	The project authorities shall also adhere to the stipulation made by the Gujarat Pollution Control Board.	We comply with the conditions stipulated in GPCB consent. Please refer **Annexure- V.**
108.	The project authorities shall inform the GPCB, Regional Office of MoEF and SEIAA about the date of financial closure and final approval of the project by the concerned authorities and the date of start of the project.	Noted. Informed to GPCB for the date of start of the project during CCA application.
109.	The SEIAA may revoke or suspend the clearance, if implementation of any of the above condition is not found satisfactory.	Noted.
110.	The company in a time bound manner shall implement these conditions. The SEIAA reserves the right to stipulate additional conditions, if the same in found necessary. The above condition will be enforced, inter-alia under the provision of the water (Prevention & control of Pollution) Act, 1974, Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act 1986 and Hazardous Waste (Management Handling and Transboundary) Rules, 2008 along with their amendment and rules.	Noted.
111.	This environmental clearance is valid for five years from the date issue.	Noted.
112.	Any appeal against this environmental clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under section 16 of the National Green Tribunal Act, 2010.	Noted.

Compliance status of Specific Conditions of CRZ clearance for proposed construction of coal jetty at Hazira, Dist: Surat by M/s Reliance Industries Limited (Ref: No.ENV-10-2014-58-E dated September 5, 2014)

Sr. No.	Conditions of the CRZ Clearance	Compliance of the conditions of the CRZ Clearance
SPECIFIC CONDITIONS		
1.	The RIL shall strictly adhere to the provisions of the CRZ Notification, 2011 issued by the Ministry of Environment and Forest, GOI.	Construction of Jetty is yet to be started. However, dredging and Shore protection work completed.
2.	The RIL shall obtain all necessary clearance permission from different Government Department/ Agencies before commencing activity related to the proposed project.	Construction of Jetty is yet to be started. However, dredging and Shore protection work completed.
3.	The RIL shall prepare Safety/Disaster Management Plan and appoint safety officer to see compliance in handling of coal/liquid in this area.	Construction of Jetty is yet to be started. However, dredging and Shore protection work completed.
4.	The RIL shall have to obtain necessary permission from the GMB/Government for jetty/port under Maritime Board Act, 1980.	Construction of Jetty is yet to be started. However, dredging and Shore protection work completed.
5.	The RIL shall construct jetty in such way that there shall not be any impact on ecology of the area.	Noted. However, construction of Jetty is yet to be started.
6.	The RIL shall carry out transportation and handling of the Coal in such a way that there shall not be any impact of coal dust in nearby area.	Coal is being transported through dedicated trucks with proper covering for avoiding coal dust during transportation.
7.	The RIL shall carry out simulation study for the proposed area considering the increase in the ship/barges traffic in the area, accidental, shrinkage of barges/ship, due to propose construction, covering the Disaster/safety and environmental aspects and shall abide by the safety and environment protection measures emerges out of this study.	Jetty construction is yet to be started. Comprehensive Marine EIA had been carried out for this purpose during the period pre monsoon (Feb- Mar-2013), monsoon (Oct-2013) and post monsoon (Jan-2014) and the recommendation shall be complied with. Simulation study is a part of marine EIA study conducted by NIO. Measures/ recommendation in EMPs shall be complied with.
8.	The dredging material shall be disposed of in such a way that there shall not be any impacts on marine environment. In case of disposal of degrade material in deep sea, it shall be disposed of only after a model study for its disposal locations, influence zone, its impact on marine environment, if any and mitigation measures suggested shall be complied with by the REL.	The dredged material has been disposed on land for filling within the complex. No impact has been caused on the marine environment.
9.	The RIL shall ensure that the CSR activities shall be carried out on need base of the local people.	Construction of Jetty is yet to be started.

10.	The RIL shall have to maintain an up to date records for generation and disposal of the dredging material and it shall be submitted to the GMB and this Department every generation and disposal.	Dredging records are being maintained and the submitted to GMB regularly.
11.	The RIL shall strictly implement the measure suggested in the CEIA by the National institute of Oceanography, Mumbai and suggested in EIA by NEERI, Nagpur for mitigation of likely adverse impacts on coastal and marine environment.	Jetty construction is yet to be started. Comprehensive Marine EIA had been carried out for this purpose during the period pre monsoon (Feb- Mar-2013), monsoon (Oct-2013) and post monsoon (Jan-2014) and the recommendation shall be complied with. Simulation study is a part of marine study conducted by NIO. Measures/ recommendation in EMPs shall be complied with.
12.	There shall no discharge of any kind of wastewater / sewage / effluent into the creek / sea or in the CRZ areas.	Jetty construction is yet to be started.
13.	No groundwater shall be taped to meet with the water requirement during construction and/or operation phases.	Jetty construction is yet to be started. Construction water is used from existing raw water ponds. No ground water is used for the CCPP project.
14.	The RIL shall prepare and furnish the detailed Disaster Management Plan to the concerned offices including the District Authorities and this Department.	Jetty construction is yet to be started. DMP prepared and submitted to DISH Surat.
15.	The RIL shall prepare and regularly update their local Oil spill Contingency and Disaster Management Plan in consonance with the National Oil spill and Disaster Contingency plan and shall Submit the same to this Department after having it vetted through the Indian Coast Guard.	Jetty construction is yet to be started. Oil Spill Contingency plan prepared and submitted to Indian coast guard for vetting.
16.	The RIL shall ensure that the construction camps are kept outside the CRZ areas and the construction labour are provided with adequate amenities like drinking water, fuel, sanitation, etc. to ensure that the existing environmental condition is not deteriorated by them.	Jetty construction is yet to be started. Construction camps were located outside CRZ area during construction activity of CCPP. Construction labor were provided necessary amenities. During the construction work of this project, environmental conditions were not deteriorated by construction labour.
17.	The RIL shall bear the cost of the external agency that may be appointed by this Department for supervision / monitoring of proposed activities.	Noted
18.	The RIL shall ensure that the Corporate Social Responsibility (CSR) activities shall be carried out on need base of the local people.	RIL-HMD has taken up many activities for the up-liftment of nearby community. The same has been continued today by Reliance Foundation not only in our area but for entire Nation.
19.	The RIL shall take up socio-economic up liftment activities in consultation with the District Collector / DDO. A separate budget shall be provided for this purpose.	RIL-HMD has taken up many activities for the up-liftmen of nearby community. The same has been continued today by Reliance Foundation not only in our area but for entire Nation.
20.	An environmental cell shall be constituted with technically qualified staff to implement the Environment Management Plan. A	A separate Environment Cell headed by Environment Head with environment qualification and 20 plus year experience. The cell is

	separate budget shall be earmarked annually for this purpose and the details shall be furnished various regulatory authorities from time to time.	supported by qualified Environment professionals (Env. Engg). Environment Head report to Site President. Environmental monitoring and analysis done in laboratory. Regular rounds were taken during construction and operational phase also regularly compliances ensured by environment cell personals.
21.	The RIL shall furnish the environmental audit report including the aspects on coastal and marine environment, to this Department every year.	Coal jetty is not yet constructed.
22.	The RIL shall regularly submit the half-yearly compliance report on the conditions stipulated by this Department/ Ministry of environment and Forest, Government of India.	Six monthly compliance reports are being submitted to MoEF&CC, RO, Gandhinagar regularly.Last compliance report was submitted vide our letter (696/31052023/HMD/MoEF&CC) dated 31/05/2023 sent through email at iro.gandhingr-mefcc@gov.in dated 01.06.2023.
23.	Any other condition that may be stipulated by this Department/ state Level Environmental Impact Assessment from time for environmental protection / management purpose.	Noted

Reliance Industries Limited – Hazira Manufacturing Division

Compliance status for the Environment Clearance Order No. F.No. J-1-1011/40/2015-IA-II(I) dated 10.07.2017 issued for Debottlenecking and Expansion of existing Petrochemical complex of Hazira Manufacturing Division (RIL-HMD) as on 30-09-2023.

Status: Identified modification for debottlenecking of existing petrochemical complex have been carried out in line with the Environment clearance mentioned above and accordingly Consent to Operate from GPCB was obtained on 26.03.2019. The new projects Styrene, new PTA, Butanediol, C5, Acetylene recovery, new MEG are not yet commissioned during the reporting period and are under design stage. The compliance status for operating units are provided.

<table>
<tr><th>Sr. No.</th><th>Conditions of the Environment clearance Condition</th><th>Compliance of the conditions of the Environment</th></tr>
<tr><td>A</td><td>Specific Conditions</td><td></td></tr>
<tr><td>I</td><td>PP shall comply with the standards/norms for Petrochemicals (Basic & Intermediates) Industry notified under the Environment (Protection) Rules, 1986 vide G.S.R 820(E) dated 09th November 2012.</td><td>Gaseous emissions from process units are monitored on monthly basis through MoEF&CC approved laboratory and its results indicate conformance to the GPCB prescribed standards.
A summary of the gaseous emissions from various process stacks for April’23-Sep’23 is presented below:
<table>
<tr><th>Parameter</th><th>Limits</th><th>Avg.</th><th>Min</th><th>Max</th></tr>
<tr><td>PM (mg/Nm3)</td><td>150</td><td>11.1</td><td>0.95</td><td>92.5</td></tr>
<tr><td>SO2 (mg/Nm3)</td><td>1700</td><td>7.6</td><td>NIL</td><td>112.1</td></tr>
<tr><td>NOx (mg/Nm3)</td><td>450</td><td>67.2</td><td>9.4</td><td>184.2</td></tr>
<tr><td>HCl (mg/Nm3)</td><td>20</td><td>1.14</td><td>NIL</td><td>5.15</td></tr>
<tr><td>Cl2 (mg/Nm3)</td><td>9</td><td>BDL</td><td>BDL</td><td>BDL</td></tr>
<tr><td>HC (mg/Nm3)</td><td>15</td><td>BDL</td><td>BDL</td><td>BDL</td></tr>
</table>
Parameters are also monitored periodically as per EPA 4th amendment rules dated 09.11.2012 and the same will be complied for the proposed projects.
Pls refer detailed Stack Monitoring report as Annexure-I</td></tr>
<tr><td>II</td><td>Continuous on-line stack monitoring for SO2 and NOx of all the flue gas stacks shall be carried out.</td><td>Continuous Online stack monitoring for all the Stacks as suggested by CPCB are carried out and connected to CPCB/GPCB server.</td></tr>
<tr><td></td><td>Low NOx burners shall be installed.</td><td>High efficiency burners have been provided at the site which restricts the NOx well below the GPCB norms. During the period of April’23-Sep’23.NOx values were observed in the range of 9.4-184.2 mg/Nm3.Details of NOx emission can be referred at Annexure-I & the same will be complied for new projects.</td></tr>
<tr><td>III</td><td>The process emissions [S02, NOx, HC (Methane & Non-methane)], VOCs and Benzene from various units shall conform to the standards prescribed under the Environment (Protection) Act.</td><td>Gaseous emissions of SO_2, NO_x, HC from process units are monitored regularly through MoEF&CC approved laboratory and its result indicate conformance to the GPCB prescribed standards.

A summary of the gaseous emissions from various process stacks for April’23-Sep’23 is presented below:</td></tr>
</table>

		<table><tr><th>Parameter</th><th>Limits</th><th>Avg.</th><th>Min</th><th>Max</th></tr><tr><td>PM (mg/Nm3)</td><td>150</td><td>11.1</td><td>0.95</td><td>92.5</td></tr><tr><td>SO2 (mg/Nm3)</td><td>1700</td><td>7.6</td><td>NIL</td><td>112.1</td></tr><tr><td>NOx (mg/Nm3)</td><td>450</td><td>67.2</td><td>9.4</td><td>184.2</td></tr><tr><td>HCl (mg/Nm3)</td><td>20</td><td>1.14</td><td>NIL</td><td>5.15</td></tr><tr><td>Cl2 (mg/Nm3)</td><td>9</td><td>BDL</td><td>BDL</td><td>BDL</td></tr><tr><td>HC (mg/Nm3)</td><td>15</td><td>BDL</td><td>BDL</td><td>BDL</td></tr></table> SO2 and NOx also monitored periodically in VCM furnaces as per EPA 4th amendment rules. Monitoring will be done as per applicable standards for new projects. Pls refer detailed Stack Monitoring report as **Annexure-I.**
	At no time, the emission levels shall go beyond the stipulated standards.	During **April'23-Sep'23**, emission levels have not exceeded the prescribed standards. The same shall be complied for the proposed projects.
	In the event of failure of pollution control system(s) adopted by the unit, the unit shall be immediately put out of operation and shall not be restarted until the desired efficiency of the pollution control device has been achieved.	Noted and will be complied for upcoming projects. During the period **April'23-Sep'23**, no such failure of pollution control equipment has been observed after debottlenecking of existing plants.
IV	Leak Detection and Repair programme shall be prepared and implemented to control HC/VOC emissions.	LDAR program is carried out in each plant on quarterly basis in all plants for detection/quantification and control of Fugitive emissions. During the reporting period the same were carried out at all plants. Existing practices will be continued for upcoming projects.
	Focus shall be given to prevent fugitive emissions for which preventive maintenance of pumps, valves, pipelines are required.	Complied as per LDAR norms. The same shall be continued for proposed plants.
	Proper maintenance of mechanical seals of pumps and valves shall be given.	Maintenance of mechanical seals of pumps and valves are being done on regular basis in all plants. Proper maintenance of mechanical seals of pumps and valves shall be done for upcoming projects.
	A preventive maintenance schedule for each unit shall be prepared and adhered to.	Being complied with.
	Fugitive emissions of HC from product storage tank yards etc. must be regularly monitored.	Being complied with.
	Sensors for detecting HC leakage shall be provided at strategic locations.	LEL detectors for monitoring HC leakages have been installed.
V	SO2 emissions after expansion from the plant shall not exceed the standard limits of CPCB.	Complied with.
VI	Ambient air quality monitoring stations, [PM10, PM2.5, SO2, NOx, non-methane-HC and Benzene] shall be set up in the complex in consultation with State Pollution Control Board, based on occurrence of maximum ground level concentration and down-wind direction of wind.	The site has established 7 AAQ monitoring stations within petrochemical complex based on the mathematical modeling studies carried out by NEERI considering wind direction and the maximum ground level concentration. An intimation letter was submitted to GPCB on 03.06.1992. A Summary of the Ambient Air Quality (AAQ) monitoring results of **April'23-Sep'23** are as below:

<table>
<tr><td></td><td></td><td>
<table>
<tr><th>Parameter</th><th>Limits</th><th>Avg</th><th>Min</th><th>Max</th></tr>
<tr><td>PM10 (ug/m3)</td><td>100</td><td>58.9</td><td>38.0</td><td>78.0</td></tr>
<tr><td>PM2.5 (ug/m3)</td><td>60</td><td>19.0</td><td>8.8</td><td>28.2</td></tr>
<tr><td>SO2 (ug/m3)</td><td>80</td><td>20.2</td><td>11.7</td><td>28.1</td></tr>
<tr><td>NO2 (ug/m3)</td><td>80</td><td>26.7</td><td>16.2</td><td>36.2</td></tr>
<tr><td>NMHC (ug/m3)</td><td>-</td><td>BDL</td><td>BDL</td><td>BDL</td></tr>
<tr><td>Benzene (ug/m3) -</td><td>-</td><td>3.7</td><td>2.6</td><td>4.8</td></tr>
</table>
The above results indicate that the values are conforming the prescribed norms specified by NAAQS/GPCB.
Limit is for annual average. Readings are on 24 hourly basis.
Details of AAQ& CAAQMS data can be referred as Annexure-II.
</td></tr>
<tr><td></td><td>The monitoring network must be decided based on modeling exercise to represent short term GLCs.</td><td>Monitoring network is already decided based on the mathematical modelling carried out by NEERI indicating the locations for maximum GLC’s.</td></tr>
<tr><td></td><td>Trend analysis W.r.t past monitoring results shall also be carried out.</td><td>Trend analysis is being done & the same will be continued. Trends of AAQ data from the year 2021 can be referred as Annexure-IV</td></tr>
<tr><td></td><td>Adequate measures based on the trend Analysis shall be taken to improve the ambient air quality in the project area.</td><td>With the trends do not indicate any such requirement as in addition to these trends the emission levels from the plant are well below the stipulated norms.</td></tr>
<tr><td>VII</td><td>The gaseous emissions from DG set shall be dispersed through adequate stack height as per CPCB standards.</td><td>Adequate stacks height is provided for proper dispersion from DG sets. Same will be complied during new projects.</td></tr>
<tr><td></td><td>Acoustic enclosure shall be provided to the DG sets to mitigate the noise pollution.</td><td>Noise suppression measures like acoustic enclosures are provided wherever required. Same will be complied with during the proposed project.</td></tr>
<tr><td></td><td>Besides, acoustic enclosure /silencer shall be installed wherever noise levels exceed the limit. Acoustic enclosure /silencer should be installed wherever it is possible.</td><td>Complied. Installation of acoustic enclosure /silencer ensured by addressing the requirements during the design phase</td></tr>
<tr><td>VIII</td><td>National Emission Standards for Petrochemicals (Basic & Intermediates) Industry issued by the Ministry vide G.S.R. 820(E) dated 09th November 2012 and amended time to time shall be complied by the unit.</td><td>Gaseous emissions from process units are monitored on monthly basis through MoEF&CC approved laboratory and its result indicate conformance to the GPCB prescribed standards.
A summary of the gaseous emissions from various process stacks for the reporting period April’23-Sep’23 is presented below:
<table>
<tr><th>Parameter</th><th>Limits</th><th>Avg.</th><th>Min</th><th>Max</th></tr>
<tr><td>PM (mg/Nm3)</td><td>150</td><td>11.1</td><td>0.95</td><td>92.5</td></tr>
<tr><td>SO2 (mg/Nm3)</td><td>1700</td><td>7.6</td><td>NIL</td><td>112.1</td></tr>
<tr><td>NOx (mg/Nm3)</td><td>450</td><td>67.2</td><td>9.4</td><td>184.2</td></tr>
<tr><td>HCl (mg/Nm3)</td><td>20</td><td>1.14</td><td>NIL</td><td>5.15</td></tr>
<tr><td>Cl2 (mg/Nm3)</td><td>9</td><td>BDL</td><td>BDL</td><td>BDL</td></tr>
<tr><td>HC (mg/Nm3)</td><td>15</td><td>BDL</td><td>BDL</td><td>BDL</td></tr>
</table>
</td></tr>
</table>

		Parameters also monitored periodically as per EPA 4th amendment rules. Same will be complied with during the new projects. Monitoring will be done as per applicable standards. Pls refer detailed Stack Monitoring report as **Annexure-I.**
IX	The additional total water requirement for the proposed project shall not exceed 15000 m3 /day.	Will be complied with.
	The total water requirement after the proposed expansion shall not exceed 1,54,288 m3/day and prior permission shall be obtained from the competent authority.	Will be complied with. Necessary approval has been obtained from Narmada, Water Resources, water supply and Kalpsar dept of Govt of Gujarat. The average freshwater requirement for the existing RIL-HMD complex was **1,20,261 m3/day (26.7 MGD)** during the reporting period.
X	Effluent shall be segregated into high TDS and low TDS effluent streams.	Segregation of effluent streams of existing complex done based on TDS & the same will be practiced for the proposed project as well. Please refer detailed treated effluent monitoring report as **Annexure-III.**
	Low TDS effluent will be treated in the ETP comprising primary, secondary and tertiary treatment facility.	Complied.
	Treated effluent will be reused for cooling tower make up.	After debottlenecking of existing plants, treated effluent are recycled as cooling water make up and DM water production etc. Average effluent recycled for the period of **April'23-Sep'23** is:**10,680m3 /day (18.97%).** Will be complied with for other approved projects also, which are yet to be commissioned.
	High TDS effluent stream will be segregated on the basis of oil content stream and non-oil Content stream.	High TDS effluent stream has been segregated based on oil content and COD load. Same Will be done for the new projects as well.
	Effluent will be treated in the ETP comprising primary and secondary treatment facility.	Complied with.
	Treated effluent will be discharged through the Existing diffuser into Tapi estuary.	Treated effluent from HMD complex is being discharged into Tapi estuary through existing multiport diffuser. Same pipeline and diffuser will be used for upcoming plants effluent discharge.
	Coke (VCM plant) and coke (Cracker plant) will be sent to TSDF/ incineration/co-processing with cement plant. Spent catalyst will be sent to the authorized re-processors.	Wastes generated, such as Coke (VCM plant) and Coke (Cracker plant) are disposed for co-processing in cement plants. Saleable spent catalysts are sold to authorized re processors. During the reporting period, **April'23-Sep'23**: Spent Catalyst Sold : 187.33 MT Coke (VCM plant) : 16.34 MT Coke (Cracker plant) : 21.03 MT Disposal is being done as per GPCB authorization.
Xi	All the effluents after treatment shall be routed to a properly lined storage pond for equalization and final control.	Complied with.
	In the storage pond, automatic monitoring system for flow rate, pH and TOC shall be provided with interlocking arrangements.	Online flow meter and pH, TOC, BOD, COD and TSS analyzers are already provided with interlocking arrangements at treated effluent discharge line.

	Data shall be uploaded on company's website and provide to respective Regional Office of MEF&CC and SPCB.	Continuous Online effluent monitoring for all the parameters prescribed as suggested by CPCB are connected to CPCB/GPCB server. Will be complied with for approved expansion projects also
Xii	Oil catchers/oil traps shall be provided at all possible locations in rain/ storm water drainage system inside the factory premises.	Catchers/oil traps (under/overflow flow & blocking gates) are provided at all possible locations in plants for recovery of oil. Will be taken care for new projects during design stage.
Xiii	The Company should strictly comply with the rules and guidelines under Manufacture, Storage and Import of Hazardous Chemicals Rules, 2016 and amended time to time.	Provisions of MSIHC Rules, 1986 e.g. Safety audit report, emergency response plan, regular mock drills, emergency alert systems, etc. are duly complied with and will be extended to the approved expansion projects also.
	Hazardous waste should be disposed of as per Hazardous Waste (Management, Handling and Trans-boundary Movement) Rules, 2016 and amended time to time.	We are disposing hazardous waste as per methods prescribed in 'authorization' and in conformance to HOWM Rules 2016. Will be complied with for approved expansion projects also
Xiv	The membership of common TSDF should be obtained for the disposal of hazardous waste.	Complied
	Copy of authorization or membership of TSDF should be submitted to Ministry's Regional Office at Bhopal.	Submitted to Ministry in earlier submissions of Six-monthly EC compliance reports.
	Chemical/inorganic sludge shall be sent to Treatment storage disposal facility (TSDF) for hazardous waste.	Chemical sludge generated from ETP plant is being sent for secured landfilling at TSDF
	Spent catalyst shall be sent to authorized recyclers/re-processors.	Spent catalyst is being sent to authorized recyclers/reprocessors. Will be complied with for approved expansion projects also
XV	The company shall strictly follow all the recommendation mentioned in the Charter on Corporate Responsibility for Environmental Protection (CREP).	Six monthly CREP compliance is being regularly submitted to GPCB Gandhinagar. Same will be followed for new projects.
XVI	Occupational Health Surveillance of the workers should be done on a regular basis and records maintained as per the Factories Act.	Occupational Health Surveillance of the workers in existing plants are done on a regular basis and records maintained as per the Factories Act. Will be complied with for approved expansion projects also
XVII	The existing green belt to be strengthened and increased by 20 Ha.	The existing green belt area has been increased by more than 20 Ha. Around 123 ha of green cover provided within Hazira Petrochemical complex. Besides, payment also made to forest deptt for 50 Ha of plantation towards Green belt development / carbon sink enhancement on forest land of villages Suvali, Hazira & Bhatlai nearest to RIL Hazira.
	PP shall explore and undertake shortfall, if any by plantation every year in the neighboring villages in consultation with local authorities to match greenbelt cover of 33%.	Area is being identified for tree plantation. Every year plantation drive has been done to do gap filling plantation in Green Belt area.
	Selection of plant species shall be as per the CPCB guidelines in consultation with the DFO.	Plant species are selected as per CPCB guidelines.
XVIII	Company shall prepare project specific environmental manual and a copy shall be made available at the project site for the compliance.	Will be complied with.

XIX	All the recommendations mentioned in the rapid risk assessment report, disaster management plan and safety guidelines shall be implemented.	All recommendations made in the risk assessment report, disaster management plan and safety guidelines are complied for units which are undergoing debottlenecking. Same will be complied for expansion projects.
	The company should make the arrangement for protection of possible fire and explosion hazards during manufacturing process in material handling.	Adequate arrangement for protection from possible fire and explosion hazards will be provided in manufacturing and material handling processes.
XX	At least 2.5 % of the total cost of the project shall be earmarked towards the Enterprise Social Responsibility and item-wise details along with time bound action plan shall be prepared and submitted to the Ministry's Regional Office at Bhopal.	Adequate funds have been allocated for implementing the conditions Stipulated by the statutory authorities. Recurring expenditure incurred to comply with the conditions stipulated by MoEF&CC as well as by GPCB during the reporting period is **Rs.29.57 crore**.
	Implementation of such program shall be ensured accordingly in a time bound manner.	Will be complied
XXI	A regular environment manager having post graduate qualification in environmental sciences/ environmental engineering to be appointed for looking after the environmental management activities of the proposed plant.	A separate Environment Cell headed by Environment Head with environment qualification and more than 20 years of experience has been established for environment management activities of existing plant and the same will cater to the need for the expansion projects. The cell is supported by qualified Environment professionals (Env.Engg). Environment Head reports to Site President.
XXII	Company shall adopt Corporate Environment Policy as per the Ministry's O.M. No. J-11013/41/2006-IA.II (I) dated 26th April, 2011 and implemented.	Already adopted and implemented. Site is ISO 14001 certified since 1999.New plants will be included in the scope of ISO 14001 certification
B	**General Conditions :**	
I	The project authorities must strictly adhere to the stipulations made by the Gujarat State Pollution Control Board, State Government and any other statutory authority.	Will be complied with. All the stipulations laid down by GPCB are being complied with. Refer **Annexure-V** for compliance with consent to operate conditions.
II	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forest and Climate Change.	Noted
	In case of deviations or alterations in the project proposal from those submitted to this Ministry for clearance, a fresh reference shall be made to the Ministry to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any	Noted
III	The locations of ambient air quality monitoring stations shall be decided in consultation with the State Pollution Control Board (SPCB)	Complied. Details of AAQ &CAAQMS data can be referred as **Annexure-II**
	And it shall be ensured that at least one stations is installed in the upwind and downwind direction as well as where maximum ground level concentrations are anticipated.	The site has established 7 AAQ monitoring stations in upwind and downwind direction within petrochemical complex based on the mathematical modeling studies carried out by NEERI considering wind direction and the maximum ground level concentration

<table>
<tr><td>IV</td><td>The National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R.No. 826(E) dated 16th November 2009 shall be followed.</td><td>A Summary of the Ambient Air Quality (AAQ) monitoring results of April’23-Sep’23 are as below:
<table>
<tr><th>Parameter</th><th>Limits</th><th>Avg</th><th>Min</th><th>Max</th></tr>
<tr><td>PM10 (ug/m3)</td><td>100</td><td>58.9</td><td>38.0</td><td>78.0</td></tr>
<tr><td>PM2.5 (ug/m3)</td><td>60</td><td>19.0</td><td>8.8</td><td>28.2</td></tr>
<tr><td>SO2 (ug/m3)</td><td>80</td><td>20.2</td><td>11.7</td><td>28.1</td></tr>
<tr><td>NO2 (ug/m3)</td><td>80</td><td>26.7</td><td>16.2</td><td>36.2</td></tr>
<tr><td>NMHC (ug/m3)</td><td>-</td><td>BDL</td><td>BDL</td><td>BDL</td></tr>
<tr><td>Benzene (ug/m3)</td><td>-</td><td>3.7</td><td>2.6</td><td>4.8</td></tr>
</table></td></tr>
<tr><td>V</td><td>The overall noise levels in and around the plant area shall be kept well within the standards by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation.</td><td>Noise control measures such as acoustic hoods, silencers and enclosures etc. are provided at high noise generating source within the existing plants. The ambient noise level monitoring has been carried out on monthly basis at eight locations during day and nighttime. Noise control measures will be provided during design stage for new plants.</td></tr>
<tr><td></td><td>The ambient noise levels shall conform to the standards prescribed under Environment (Protection) Act, 1986 Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).</td><td>Noise levels monitored at periphery of RIL HMD are in the range of 55.8-69.1 dBA (Leq) during daytime and 53.7-65.6 dBA (Leq) during nighttime with in reporting period April’23-Sep’23.</td></tr>
<tr><td>VI</td><td>The Company shall harvest rainwater from the roof tops of the buildings and storm water drains to recharge the ground water and use the same water for the process activities of the project to conserve fresh water.</td><td>As RIL Hazira plant is located near Tapi River, due to tidal effect and close proximity to sea, Ground water table is high and water is saline due to salinity ingress. Hence, we have implemented a rainwater collection and storage facility in the plant to reduce water drawl from the river to that extent. Surface runoff & roof top rainwater collection scheme is implemented at Rel Pipe plant, POY cooling towers, and Raw Water-2 storm channel.
Ground water recharge wells have been as CSR activity in surrounding villages.</td></tr>
<tr><td>VII</td><td>Training shall be imparted to all employees on safety and health aspects of chemicals handling.</td><td>Training related to safety and health aspects of chemical handling are imparted to all workers, including contractor workers.
The level-1 and level-2 training is provided to the contract workers which includes the safe work practices related to safe chemical handling and use of PPEs.
All RIL Hazira employees are imparted safety training through induction and refresher training on safe work practices, safe chemical handling and use of PPEs. Same will be complied for the new projects.</td></tr>
<tr><td></td><td>Pre-employment and routine periodical medical examinations for all employees shall be undertaken on regular basis.</td><td>Pre-employment and periodical medical examination is carried out by OHC on a regular basis for all employees and records are maintained as per the Gujarat Factories Act & Rules. The same will be complied for the new project as well.</td></tr>
<tr><td></td><td>Training to all employees on handling of chemicals shall be imparted.</td><td>Training related to safety and health aspects of chemical handling are imparted to all workers, including contractor workers. .</td></tr>
</table>

		The level-1 and level-2 training is provided to the contract workers which includes the safe work practices related to safe chemical handling and use of PPEs. All RIL Hazira employees are imparted safety training through induction and refresher training on safe work practices, safe chemical handling and use of PPE.
VIII	The company shall also comply with all the environmental protection measures and safeguards proposed in the documents submitted to the Ministry.	Being complied with.
	All the recommendations made in the EIA &EMP in respect of environmental management and risk mitigation measures relating to the project shall be implemented.	Recommendations of the EIA/EMP reports will be implemented during project execution and operational phase.
IX	The company shall undertake all relevant measures for improving the socio--economic conditions of the surrounding area.	RIL-HMD has taken up many activities for the up-liftment of nearby community. The same is now being undertaken by Reliance Foundation not only in our area but for entire India.
	CSR activities shall be undertaken by involving local villages and administration.	RIL-HMD has taken up many activities for the upliftment of nearby community. The same is now undertaken by Reliance Foundation not only in our area but for entire India.
X	The company shall undertake eco-developmental measures including community welfare measures in the project area for the overall improvement of the environment.	RIL-HMD has taken up many activities for the upliftment of nearby community. The same is now undertaken by Reliance Foundation not only in our area but for entire India.
XI	A separate Environmental Management Cell equipped with full-fledged laboratory facilities shall be set up to carry out the Environmental Management and Monitoring functions.	A separate Environment Cell headed by Environment Head with environment qualification and 20 plus year experience has been established to look after environment management activities of existing plant and the same will cater to the need for the expansion projects. The cell is supported by qualified Environment professionals (Env. Engg). Environment Head report to Site President.
XII	The company shall earmark sufficient funds towards capital cost and recurring cost per annum to implement the conditions stipulated by the Ministry of Environment, Forest and Climate Change as well as the State Government along with the Implementation schedule for all the conditions stipulated herein.	Adequate funds have been allocated for implementing environmental management and socio-economic activities. Expenditure incurred to comply with the conditions stipulated by MoEF&CC as well as by GPCB during the reporting period is **Rs.29.57 crore**.
	The funds so earmarked for environment management/ pollution control measures shall not be Diverted for any other purpose.	Funds allocated for environment management/ pollution control measures are spent for such measures only and are not diverted for any other purpose.
XIII	A copy of the clearance letter shall be sent by the project proponent to concerned Panchayat, Zilla Parishad/Municipal Corporation, Urban local Body and the local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal.	Copies of the Environmental Clearance submitted to Mora Panchayat, Zilla Parishad/Municipal Corporation, Urban local Body and the local NGO etc

XIV	The project proponent shall also submit six monthly reports on the status of compliance of the stipulated Environmental Clearance conditions including results of monitored data (both in hard copies as well as by e-mail) to the respective Regional Office of MoEF&CC, the respective Zonal Office of CPCB and SPCB.	Six monthly compliance report is submitted to MoEF&CC, Gandhinagar regularly. Last compliance report was submitted vide our letter (696/31052023/HMD/MoEF&CC) dated 31/05/2023 sent through email at iro.gandhingr-mefcc@gov.in dated 01.06.2023.)
	A copy of Environmental Clearance and six monthly compliance status report shall be posted on the website of the company.	Six monthly compliance report is being submitted to MoEF&CC, RO, Gandhinagar regularly. Last compliance report was submitted vide our letter (696/31052023/HMD/MoEF&CC) dated 31/05/2023 sent through email at iro.gandhingr-mefcc@gov.in dated 01.06.2023.)
XV	The environmental statement for each financial year ending 31st March in Form-V as is mandated shall be submitted to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended Subsequently, shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the respective Regional Offices of MoEF&CC by e-mail.	Form V is regularly submitted to GPCB. Please Refer Form-V for FY 22-23 as **Annexure-VI**.
XVI	The project proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB/Committee and may also be seen at Website of the Ministry at http://moef.nic.in.	Public have been informed about the grant of Environment clearance through the advertisement in the local newspaper dated 16/07/17 and copy of advertisement is Submitted to ministry
	This shall be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same shall be forwarded to the concerned Regional Office of the Ministry.	Public has been informed about the Environment clearance through the advertisement in the local newspaper dated 16/07/17 and copy of advertisement is Submitted to ministry.
XVII	The project authorities shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of start of the project.	Noted
17	The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.	Noted
18	The Ministry reserves the right to stipulate additional conditions, if found necessary.	Noted
	The company in a time bound manner will implement these conditions.	Noted

19	The above conditions will be enforced, *inter alia* under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, Air (Prevention &. Control of Water Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous Waste (Management, Handling and Trans-boundary Movement) Rules, 2008 and the Public Liability Insurance Act, 1991 along with their amendments and rules.	Noted

Compliance status for the Environment Clearance File No. J-13012/5/2021-IA. I(T) dated 31st Oct 2022 issued for Expansion of 470 MW to 680 MW with an additional 45 MW of power recovery from process and use of biomass to the extent of its availability in CFBC boilers of CCPP at Hazira as on 30-09-2023.

Status: Preparation for operationalization of existing Gas based power plant to increase the capacity from 470 to 680 MW has been done in line with the Environment clearance mentioned above and accordingly application for amendment in Consent to Operate submitted to GPCB. However the full capacity generation will be started once expansion projects viz carbon fiber stared operating. The Proposed new projects for 45 MW Power production from CF & PTA are under design stage during reporting period. Thus, compliance status is provided for operationalization of proposed gas-based power plant and use of biomass in existing Coal based power plant (360MW).

<table>
<tr><th>Sr. No.</th><th>Conditions of the Environment clearance Condition</th><th>Compliance of the conditions of the Environment</th></tr>
<tr><td>I.</td><td>Environment Management</td><td></td></tr>
<tr><td rowspan="4">i.</td><td>Green Belt with Miyawaki plantation (Three row plantation) along the plant boundary shall be developed with more than 90 % survival rate of the plant species.</td><td>Complied. A green belt area is already developed with more than 3 rows around the plant boundary with survival rate of >90% .</td></tr>
<tr><td>It would be ensured that total 33% (minimum) area of total project cover area is under green belt .</td><td>Complied. 123 Ha of green cover provided within Hazira Petrochemical complex which admeasuring ~33 % of total area.</td></tr>
<tr><td>An action plan in this regard to be submitted before regional office of the Ministry Within 3 months.</td><td>We have already submitted additional green belt development plan through letter dated 14/09/22.</td></tr>
<tr><td>Plant Species shall be selected for green belt after Air Pollution Tolerance (APTI)study</td><td>Plant species are already selected for existing plant as per CPCB guideline.</td></tr>
<tr><td>ii</td><td>Continuous Air Quality Monitoring station shall be established in villages falling within 5KM radius from the project boundary namely Suvali Village, Mora Village ,Damaka Village, Limla Village and Bhatlai Village connecting with CPCB server.</td><td>Continuous Ambient Air Quality Monitoring Station (CAAQMS) is already installed within the existing plant considering the existing Coal & Gas based power plant. Ambient air quality monitoring stations are already in operation at nearby villages viz., Dumas, Bhatlai , Hazira & Icchapore. Its monitoring report is being submitted regularly to GPCB and MoEF&CC .</td></tr>
<tr><td>iii</td><td>24*7 online Monitoring system for ambient air quality shall be established with its connectivity with SPCB and CPCB server.</td><td>As mentioned above Continuous AAQ monitoring station has been established with in the existing complex.</td></tr>
<tr><td></td><td>Stack monitoring shall be done through 24*7 online monitoring system . The emission standards for bio mass/ coal based thermal power plant shall be complied</td><td>Online analysers for PM, SO2 & NOx have been installed on all CPP & CCPP stacks with connectivity to CPCB /GPCB server.
Coal / Bio mass based thermal power plant stacks monitoring done on regular basis. Results are tabulated below:
<table>
<tr><th>Parameter mg/ Nm3)</th><th>GPCB Limits</th><th>Avg.</th><th>Min</th><th>Max</th></tr>
<tr><td>PM</td><td>50</td><td>5.8</td><td>0.9</td><td>10.3</td></tr>
<tr><td>SO2</td><td>600</td><td>210.9</td><td>48.1</td><td>544.5</td></tr>
<tr><td>NOX</td><td>300</td><td>196.8</td><td>145.9</td><td>257.2</td></tr>
<tr><td>Hg</td><td>0.03</td><td>BDL</td><td>BDL</td><td>BDL</td></tr>
</table></td></tr>
<tr><td>iv.</td><td>Water quality monitoring stations shall be established in Tapti estuary for continuous monitoring of estuary water connecting with CPCB server</td><td>2 water quality monitoring locations have been setup– 100m upstream and 100m downstream of treated effluent discharge point on Tapi River estuarine zone. Samples have been collected at regular interval and analysed in our laboratory.</td></tr>
</table>

v.	Adequate dust extraction system such as cyclones /bag filters and water spray system in dusty areas such as in coal handling and ash handling points, transfer areas and other vulnerable dusty areas shall be provided along with an environment friendly sludge disposal system.	Adequate dust suppression / extraction systems have been provided at coal / biomass based power plant such as water sprinkler systems, covered coal storage area, closed silo for fly ash storage to avoid dust in CCPP etc.
vi	Harnessing solar power within the premises of the plant particularly at available roof tops shall be carried out and status of implementation including actual generation of solar power shall be submitted along with half yearly monitoring report.	Solar energy is already being harnessed at RILHMD. Solar water heating system is installed at our Guest House for all the rooms. Around **~100 KW** of Solar Panel has been installed within the complex at various places. Around **21,000 SM3/day** of Biogas generated through anaerobic digesters and the same is being utilized as renewable source of fuel in our vaporizers.
vii.	Monitoring of surface water quantity and ground water quality shall also be regularly conducted, and records maintained.	Fresh water (Tapi River) quantity monitoring is done on daily basis. The average freshwater requirement for the existing RIL-HMD complex was **1,20,261 m3/day (26.7MGD)** during the reporting period. Ground water quality monitoring is also being carried out in nearby villages on six monthly basis.
	The monitored area shall be submitted to the ministry regularly. Further, Monitoring points shall be location between the plant and drainage in the direction of flow of ground water and records maintained	As mentioned above, Ground Water monitoring has been carried out regularly in nearby villages and its results are attached herewith as **Annexure- IX**
	Monitoring for heavy metals in ground water shall also be undertaken and results /findings submitted along with half yearly monitoring report.	Complied. Pl. refer **Annexure -IX**
viii.	A well-designed rainwater harvesting system shall be put in place within six months, which shall compromise of rainwater collection from the built up and open area in the plant premises and detailed record kept of the quantity of water harvested every year and its use.	We have already implemented a rainwater collection and storage facility in the existing plants to reduce freshwater drawl from the river to that extent. Surface runoff & roof top rainwater collection scheme is implemented at Rel Pipe plant, POY cooling towers, and Raw Water-2 storm channel and Raw water reservoirs. Rain water conserved is **1,63,676 m3** during review period and this water is used as a source of raw water and thus reducing the total water withdrawal.
Waste management:		
ix.	Project proponent shall explore the use of treated sewage water from the sewage Treatment plant or Municipality /local bodies /similar organization located within 50KM radius of the proposed power project to minimize the water drawl from surface water bodies.	For reduction of fresh water withdrawal RIL HMD is currently recycling **~10,000 m^3/day** of treated effluent as well as Rain water conservation on regular basis. HMD complex is operated at an optimized water drawl demand. Other possibilities for reduction are under consideration.
x.	A detailed action plan regarding leachate handling shall be prepared and implemented in consultation with SPCB and the same shall be submitted to the Regional Office of the Ministry. Zero liquid discharge shall be adopted.	Leachate handling point is not applicable to us as RIL-HMD is not operating any landfill site neither does it maintain any ash pond. A small leachate handling system is provided around Hazardous waste storage area of existing complex and leachate generated will be treated in existing ETP.
	Leachate shall be treated and reused. No treated leachate shall be discharged in any circumstances. Characteristics of leachate and the treated leachate shall be monitored once in quarter and records shall be maintained.	Not applicable. Leachate handling point is not applicable to us as RIL-HMD is not operating any landfill site neither it maintains any ash pond.

xi.	No water bodies including natural drainage system in the area shall be disturbed due to activities associated with the setting up /operation of the power plant.	Complied. Natural drainage system in the area is not disturbed due to activities associated with operationalization of gas-based power plant and biomass usage in coal-based power plant.
xii.	Fly ash handling shall be done strictly as per extent rules/regulations of the Ministry/CPCB issued from time to time .	Complied
III	**Socio -economic :**	
xiii	Epidemiological study among population within 5 KM radius of project cover area shall be carried out on regular interval (Once in Two year) through independent agency. Necessary measures shall be taken as per finding of study in consultation with district administration. Detailed plan shall be prepared and implemented in stipulated time to mitigate problems of malnutrition (6.67% current level) in project surrounding area as observed by the project proponent during Epidemiological study. Action taken report shall be submitted to the Regional Office of the Ministry .	We are in discussion with nearby village's Public Health Center Doctors and reviewing the data regarding the prevalent diseases in the area. As per them no epidemic has been reported in 5 KM radius of area from the project site till today. Also, there is no malnutrition reported in this area. However, if any need is indicated and need is felt then we will initiate further action in this regard.
xiv	EC shall be published in at least two newspapers widely circulated; one shall be in the vernacular language of the locality concerned.	Grant of Environment clearance has been advertised in the two local newspapers as stipulated dated 05/11/2022 and copy of advertisement is submitted to ministry .
xv	In view of CER schemes identified based on need-based assessment shall be implemented in consultation with the village Panchayat and the District Administration starting from the development of project itself.	Reliance Foundation has taken up many activities for the upliftment of nearby community. A department established for the same identifies the requirement with discussion with village Panchayat as well as District administration before implementation. Reliance Foundation also undertake both CSR and CER schemes, not only in Hazira area but for entire India.
	As part of CER prior identification of local employable youth and eventual employment in the project after imparting relevant training shall be undertaken. Company shall provide separate budget for community development activities and income generating programs.	RIL-HMD has taken up activities like education / training /Rain water harvesting / tree plantation etc for nearby community.
xvi	CER activities will be carried out as per OM No. 22-65 /2017-IA.II dated 30th September ,2020 along with the detailed scheduled of implementation with appropriate budgeting .	CER activities are undertaken as per the referred OM.
xvii	Public grievance redressals system shall be established under supervision of project head. The functioning of the system shall be reviewed every month	Public Grievance Redressal system has been already established and it is being periodically reviewed by our Corporate Affairs Dept.,
xviii	A vision document comprising prospective plan for implementation of various CER activities, plantation program outside the project cover area , rejuvenation and conservation of water bodies within 5KM radius of the project cover area, creation of sacred groves etc shall be prepared and submitted to Regional Office of the Ministry within 6 Months. Implementation status of the same shall be reported to the Regional office in 6 Monthly compliance report	The approval accorded is for operationalization of the units. The Captive power Plant and the CCPP are already installed and commissioned. RIL-HMD has taken up many activities for the upliftment of nearby community. The same is now undertaken by Reliance Foundation not only in our area but for entire India.
IV.	**Miscellaneous**	

<table>
<tr><td>xix.</td><td>Implementation of EMP and compliance of EC conditions, E(P) Act,1986 Rules and MoEF&CC Notifications issued time to time shall be achieved by a full time qualified Environment Officer having Post Graduate qualification in environment Science /Environmental Engineering .</td><td>A separate Environment Cell headed by Environment Head with environment qualification and more than 20 years of experience has been established for environment management activities of the plant. The cell employs qualified Environment professionals (Env.Engg).</td></tr>
<tr><td>xx.</td><td>The conditions stipulated in the previous EC/ECs granted by the Ministry /SEIAA shall also be complied with.</td><td>All the conditions stipulated in the Environment Clearances granted to the site are being complied.
Six monthly compliance report is being submitted to MoEF&CC, IRO, Gandhinagar regularly. Last compliance report was submitted vide our letter (696/31052023/HMD/MoEF&CC) dated 31/05/2023 sent through email at iro.gandhingr-mefcc@gov.in dated 01.06.2023.)</td></tr>
<tr><td>xxi.</td><td>Environment Audit of plant shall be done annually, and report shall be submitted to Regional Office of the Ministry.</td><td>Environment audit is being carried out on yearly basis by environmental auditor appointed by GPCB and report is being submitted to GPCB Gandhinagar. Copy of last year audit report submission letter is attached herewith as Annexure -X</td></tr>
<tr><td>xxii.</td><td>All necessary clearance from the concerned Authority ,as may be applicable should be obtained prior to commencement of project or activity .</td><td>Agreed</td></tr>
<tr><td>B.</td><td colspan="2">Standards EC Conditions For Thermal Power Sector :</td></tr>
<tr><td>I</td><td colspan="2">Statutory Compliance:</td></tr>
<tr><td>(i)</td><td>Emission Standards for Thermal Power Plant as per Ministry’s Notifications S.O.3305 (E) dated 07.12.2015,G.S.R.593 (E) dated 28.06.2018 and as amended from time to time shall be complied .</td><td>Emission monitoring of thermal power plant done on regular basis. Results are tabulated below:
<table>
<tr><th>Parameter mg/Nm3)</th><th>GPCB Limits</th><th>Avg.</th><th>Min</th><th>Max</th></tr>
<tr><td>PM</td><td>50</td><td>5.8</td><td>0.9</td><td>10.3</td></tr>
<tr><td>SO2</td><td>600</td><td>210.9</td><td>48.1</td><td>544.5</td></tr>
<tr><td>NOX</td><td>300</td><td>196.8</td><td>145.9</td><td>257.2</td></tr>
<tr><td>Hg</td><td>0.03</td><td>BDL</td><td>BDL</td><td>BDL</td></tr>
</table></td></tr>
<tr><td>(ii)</td><td>Part C of Schedule II of Municipal Solid waste Rules, 2016 dated 08.04.2016 as amended from time to time shall be complied for Power plants based on Municipal Solid Waste.</td><td>The plant is not based on MSW. Bio-mass in the form of agricultural wastes / bio sludge from ETP etc. is used to the extent of its availability.</td></tr>
<tr><td>(iii)</td><td>MoEF&CC Notifications G.S.R 02 (E) dated 02.01.2014 as amended time to time regarding use of raw or blended or beneficiated /washed coal with ash content not exceeding 34% shall be complied with as applicable .</td><td>This condition is not applicable as only imported coal is being used for power generation and hence ash content remain always less than 34 %.</td></tr>
<tr><td>(iv)</td><td>MoEF&CC Notification on Fly Ash Utilization S.O. 763 (E) dated 14.09.1999 ,S.O. 979 (E) dated 27.08.2003 , S.O. 2804 (E)dated 3.11.2009 , S.O.254 (E) dated 25.01.2016 as amended from time to time shall be complied .</td><td>Complied.100% Ash is being utilized as per FA notification.</td></tr>
<tr><td>(v)</td><td>Thermal Power plants other than the power plants located on coast and using sea water for cooling purposes, shall achieve specific water consumption of 2.5 m3/MWh and Zero effluent discharge.</td><td>Coal based power plant of RIL-HMD is commissioned in December 2016. Thus, norm of 2.5 m3 / MWh is not applicable. Norm applicable is 3.5 m3 / MWh which is complied with.</td></tr>
<tr><td>(vi)</td><td>The recommendations from Standing Committee of NBWL under the Wild life (Protection) Act ,1972 should be obtained, if applicable.</td><td>Not applicable</td></tr>
</table>

<table>
<tr><td>(vii)</td><td>No objection Certificate from Ministry of civil Aviation be obtained for installation of requisite chimney height and its siting criteria for height clearance.</td><td>Not applicable as current project is operationalization of existing gas based power plant.</td></tr>
<tr><td>(viii)</td><td>Ground water shall not be drawn during construction of the project. In case, groundwater is drawn during Construction, necessary permission be obtained from CGWA .</td><td>Not Applicable, as the units are already installed.</td></tr>
<tr><td>II.</td><td colspan="2">Ash Content / Mode of transportation of coal :</td></tr>
<tr><td>(i)</td><td>EC is given on the basis of assumption of % of ash content and _Km distance of transportation in rail/road conveyor /any other mode .</td><td>Not Applicable.</td></tr>
<tr><td></td><td>Any increase of %ash content by more than 1 percent, and/or any change in transportation mode or increase in the transport distance (except for rail) require application for modifications of EC condition after conducting the “Incremental impact assessment ‘ and proposal for mitigation measures</td><td>Not Applicable as it is not in the scope of this EC.</td></tr>
<tr><td>III.</td><td colspan="2">Air quality Monitoring and Management:</td></tr>
<tr><td>(i)</td><td>Flue gas Desulphurization System shall be installed based on Lime /Ammonia dosing to capture Sulphur in the flue gases to meet the SO2 emission standard of 100mg/Nm3 .</td><td>This condition is not applicable as our coal based power plant is commissioned in December 2016 and current project is only operationalization of gas based power plant. As per the TPP standards Notification the applicable limit for SO2 emission is thus 600 mg/Nm3.</td></tr>
<tr><td>(ii)</td><td>Selective Catalytic Reduction (SCR) system or the Selective Non Catalytic Reduction (SNCR) system or Low NOX burners with over fire Air (OFA) system shall be installed.</td><td>Power plant has low NOx burners installed and the emission of NOx is within limits at all times.</td></tr>
<tr><td>a.</td><td>To achieve NOX emission standard of 100 mg/Nm3</td><td>This condition is not applicable as current project is only operationalization of gas based power plant.</td></tr>
<tr><td>(iii)</td><td>High efficiency Electrostatic Precipitators (ESPs) shall be installed in each unit to ensure that particular matter (PM) emission to meet the stipulated standards of 30 mg/NM3.</td><td>This condition is not applicable as current project is only operationalization of gas based power plant. Moreover our coal based power plant commissioned in December 2016 and thus norm of 30 mg / Nm3 is not applicable. Thus the permissible limit for PM emission is 50 mg/Nm3.</td></tr>
<tr><td>(iv)</td><td>Stack of prescribed height shall be provided with continuous online monitoring instruments for SOx, NOx, and particulate matter as per extant rules.</td><td>Complied</td></tr>
<tr><td>(v)</td><td>Exit Velocity of flue gases shall not be less than 20-23 m/s . Mercury emission from stack shall also be monitored periodically .</td><td>Complied. EC for coal based power plant has been granted for designed flow rate of chimney based on mathematical modelling. Same flow rate is being maintained. CCPP stack monitoring done on regular basis including mercury emission. Results are tabulated below:
<table>
<tr><th>Parameter</th><th>GPCB Limits</th><th>Avg.</th><th>Min</th><th>Max</th></tr>
<tr><td>Hg(mg/ Nm3)</td><td>0.03</td><td>BDL</td><td>BDL</td><td>BDL</td></tr>
</table></td></tr>
<tr><td>(vi)</td><td>Continuous Ambient Air Quality monitoring system shall be set up to monitor common /criteria pollutants from the flue gases such as PM10 ,PM2.5 ,SO2,NOx within the plant area at least at one location.</td><td>Continuous Ambient Air Quality Monitoring Station (CAAQMS) has already installed within the complex.</td></tr>
</table>

<table>
<tr><td></td><td>The monitoring of other locations (at least three locations outside the plant area covering upwind and downwind direction at an angle of 120 degree each) shall be carried out manually .</td><td>The site has established 7 AAQ monitoring stations within petrochemical complex based on the mathematical modelling studies carried out by NEERI considering wind direction and the maximum ground level concentration. An intimation letter is submitted to GPCB on 03.06.1992.

A Summary of the Ambient Air Quality (AAQ) monitoring results of April’23-Sep’23 are as below:

<table>
<tr><th>Parameter</th><th>Limits</th><th>Avg</th><th>Min</th><th>Max</th></tr>
<tr><td>PM10 (ug/m3)</td><td>100</td><td>58.9</td><td>38.0</td><td>78.0</td></tr>
<tr><td>PM2.5 (ug/m3)</td><td>60</td><td>19.0</td><td>8.8</td><td>28.2</td></tr>
<tr><td>SO2 (ug/m3)</td><td>80</td><td>20.2</td><td>11.7</td><td>28.1</td></tr>
<tr><td>NO2 (ug/m3)</td><td>80</td><td>26.7</td><td>16.2</td><td>36.2</td></tr>
<tr><td>NMHC (ug/m3)</td><td>-</td><td>BDL</td><td>BDL</td><td>BDL</td></tr>
<tr><td>Benzene (ug/m3) -</td><td>-</td><td>3.7</td><td>2.6</td><td>4.8</td></tr>
</table>

Details of AAQ &CAAQMS data can be referred as Annexure-II</td></tr>
<tr><td>(vii)</td><td>Adequate dust extraction system shall be installed in coal handling ,ash handling areas and material transfer points to control fugitive emissions .</td><td>This condition is not applicable as our project is operationalisation of gas-based power plant. However, adequate dust extraction system are installed at coal handling ,ash handling areas and material transfer points to control fugitive emissions .</td></tr>
<tr><td>(viii)</td><td>Appropriate Air Pollution Control measures (DEs/DSs) be provided at all the dust generating sources including sufficient water sprinkling arrangements at various location viz., roads /excavation sites, crusher plants, transfer points ,loading and unloading areas etc.</td><td>This condition is not applicable as our project is operationalisation of gas-based power plant. However, water Sprinkling arrangements are provided at suitable locations such as coal storage yard, crusher storage and loading and unloading areas.</td></tr>
<tr><td>IV.</td><td colspan="2">Noise Pollution and its control Measures :</td></tr>
<tr><td>(i)</td><td>The ambient Noise levels shall meet the standards prescribed as per the Noise Pollution (Regulation and Control) Rules 2000</td><td>The ambient noise level monitoring is being carried out regularly.
Maximum Noise level found at periphery of RIL HMD in the range of 55.8-69.1 dBA (Leq) during daytime and 53.7- 65.6 dBA (Leq) during nighttime with in reporting period. Noise levels are found well with-in the stipulated norms. Workplace noise levels are monitored and required precautions are taken to avoid exposure.</td></tr>
<tr><td>(ii)</td><td>Person Exposed to high noise generating equipment shall use personal protective Equipment (PPE) like earplug/ear muffs etc</td><td>Use of earplug/ ear muffs is compulsory at high noise area for employees and contractors. This is being ensured regularly.</td></tr>
<tr><td>(iii)</td><td>Periodically medical examination on hearing loss shall be carried out for all the workers and maintain audiometric record and for treatment of any hearing loss including rotating to non-noisy /less noisy areas .</td><td>Occupational health surveillance including audiometry test is done periodically of the workers and its records are maintained.</td></tr>
<tr><td>V.</td><td colspan="2">Human Health Environment:</td></tr>
<tr><td>(i)</td><td>Biannual Health checkup of all the workers is to be conducted.</td><td>Occupational health check-up of the workers is done as per Gujarat factory Rules and its records are maintained.</td></tr>
</table>

	The study shall consider of chronic exposure to noise which may lead to adverse effects like increase in heart rate and blood Pressure, hypertension and peripheral vasoconstriction and thus increased peripheral vascular resistance. Similarly, the study shall also assess the health impacts due to air polluting agents.	Workplace monitoring including air polluting agents is being done periodically for existing plants.
(ii)	Baseline health status within study area shall be assessed and report be prepared. Mitigation measures should be taken to address the endemic diseases.	This condition is not applicable.
(iii)	Impact of operation of power plant on agriculture Crops, large water bodies (as applicable) once in two years by engaging an institute of repute. The study shall also include impact due to heavy metals associated with emission from power plant .	Current project is operationalisation of existing gas based power plant and gas being a cleaner fuel its emission is always remain well within the norms prescribed by GPCB / CPCB. Thus said impact is not envisaged.
(iv)	Sewage Treatment Plant shall be provided for domestic wastewater.	Domestic wastewater is treated along with process effluent in existing ETP. There is no separate Sewage treatment plant within RIL HMD complex.
(VI)	**Water Quality monitoring and Management:**	
(i)	Induced /Natural draft closed cycle wet cooling system including cooling towers shall be set up with minimum Cycles of Concentration (COC) of 5.0 or above for power using fresh water to achieve specific water consumption 2.5m3/MWHr (Or).	Complied. However, as mentioned above our coal based power plant is commissioned in December 2016 and therefore the norm of 2.5 m3 / MWh is not applicable.
	Induced /Natural draft open cycle cooling system shall be set up with minimum Cycles (COC) of 1.5 or above for power plants using sea water	Not applicable.
(ii)	In case of the water withdrawal from River, a minimum flow 15% of the average flow of 120 consecutive leanest days should be maintained for environmental flow whichever is higher, to be released during the lean season after water withdrawal of proposed power plant .	Tapi River, our source of water, is a perennial river. However, water drawl permission granted by Govt. Of Gujarat considering all these aspects.
(iii)	Records pertaining to measurements of daily water withdrawal and river flows (obtained from Irrigation Department / water Resources Department) immediately upstream and downstream of withdrawal shall be maintained .	Record for freshwater withdrawal is maintained.
(iv)	Rainwater harvesting in and around the plant area be taken up to reduce drawl of fresh water. If possible, recharge of ground water to be undertaken to improve the ground water table in the area .	Rain water conservation is already implemented at site as mentioned above. As RIL Hazira plant is located at the mouth of Tapi River, due to tidal effect and close proximity to sea, Ground water table is high and water is saline due to salinity ingress. Therefore, Ground Water recharge is not serving any purpose in this region.
(v)	Regular (At least once in six month) monitoring of ground water quality in and around the ash pond area including presence of heavy metals (Hg,Cr,As ,Pb,etc) shall be carried out as per CPCB guidelines . Surface water quality monitoring shall be compared with the baseline data so as to ensure that the groundwater and surface water quality is not adversely impacted due to the project & its activities .	This condition is not applicable as our project is operationalisation of gas based power plant.

<table>
<tr><td>(vi)</td><td>The treated effluent emanating from the different processes such as DM plant, boiler blow down, ash pond/dyke, sewage etc conforming to the prescribed standards shall be re circulated and reused .</td><td>Treated effluent is being recycled as cooling water make up and DM water production etc. in existing plants.
Average effluent recycled for the period of April’23-Sep’23 is: 10,680 m3 /day (18.97 %).</td></tr>
<tr><td></td><td>Sludge /rejects will be disposed in accordance with the Hazardous waste Management Rules.</td><td>Complied</td></tr>
<tr><td>(vii)</td><td>Hot water dispensed from the condenser should be adequately cooled to ensure the temperature of the released surface water is not more than 5 degrees Celsius above the temperature of the intake water</td><td>This condition is not applicable as condenser cooling water is routed through cooling tower and does not use once through cooling.</td></tr>
<tr><td>(viii)</td><td>Based on the commitment made by the project proponent, sewage Treatments plants within the radius of 50 Km from proposed project ,the treated sewage from STP shall be used as and alternative to the fresh water sources to minimize the fresh water drawl from surface water bodies.</td><td>For reduction of fresh water withdrawal RIL HMD is presently recycling ~10,000 m^3/day of treated effluent as well as Rain water conservation as mentioned above.</td></tr>
<tr><td>(ix)</td><td>Waste water generation from various sources (Viz. cooling tower blowdown, waste water from ash handling etc) shall be treated to meet the standards of pH:6.5-8.5; Total Suspended Solids :100 mg/l ;O&G :20 mg/l ;Copper :1 mg/l ; iron :1 mg/l ; Free chlorine :0.5 ,Zinc:1.0 mg/l ; Total Chromium :0.2 mg/l ; Phosphate:5.0 mg/l ;</td><td>The results of treated effluent conform to the prescribed standards of GPCB. The treated effluent is discharged through the existing marine disposal system in Tapi estuary.
The summary of the treated effluent quality for the reporting period April’23-Sep’23 is as below:
<table>
<tr><th>Parameter</th><th>GPCB Limits</th><th>Avg.</th><th>Min.</th><th>Max.</th></tr>
<tr><td>pH</td><td>6.5-8.5</td><td>7.4</td><td>7.2</td><td>7.7</td></tr>
<tr><td>TSS (mg/l)</td><td>100</td><td>16.5</td><td>14.0</td><td>19.0</td></tr>
<tr><td>O&G(mg/l)</td><td>10</td><td><1.8</td><td><1</td><td><2</td></tr>
<tr><td>COD (mg/l)</td><td>250</td><td>82</td><td>78</td><td>86</td></tr>
<tr><td>BOD (3 days 27^oC)</td><td>50</td><td>21.3</td><td>19.0</td><td>23.0</td></tr>
<tr><td>NH3-N (mg/l)</td><td>50</td><td>4.1</td><td>3.1</td><td>5.1</td></tr>
</table>
Detail of treated effluent quality can be seen as Annexure-III.</td></tr>
<tr><td>(x)</td><td>Sewage generation will be treated by setting up sewage Treatment plant to maintain the treated sewage characteristics of pH:6.5-9.0; Biochemical Demand (BOD) :30 mg/l; Total Suspended Solids ;100 mg/l; Free Coliform (Most Probable Number: <1000 per 100 ml.</td><td>Sewage water is treated along with process effluent and being discharged after conforming to the norms prescribed by GPCB.</td></tr>
<tr><td>VII.</td><td colspan="2">Risk Mitigation and Disaster Management:</td></tr>
<tr><td>(i)</td><td>Adequate safety measures and environmental safeguards shall be provided in the plant area to control spontaneous fires in coal yard, especially during dry and humid season.</td><td>Adequate Fire protection systems consist of fire hydrant system all-round the plant area and storage yards, Nitrogen spray system for transformers have been provided.
Automatic fire detection and alarm, manual fire alarm system, portable fire extinguishers, adequate capacity fire water storage tanks etc. installed.</td></tr>
<tr><td>(ii)</td><td>Storage facilities for auxiliary liquid fuel such as LDO and HFO /LSHS shall be made as per the extent rules in the plant area in accordance with the directives of Petroleum & Explosives safety Organization (PESO).</td><td>Auxiliary liquid fuel such as LDO and HFO /LSHS are stored after taking necessary permissions from PESO (Chief controller of explosive (CCOE)) Nagpur & Directorate Industrial safety and Health, Gujarat</td></tr>
<tr><td></td><td>Sulphur content in the liquid fuel should not exceed 0.5%.</td><td>Low Sulphur fuel like Natural gas, Ethane & LSHS is used in the plant to minimize SO2 emission.</td></tr>
</table>

	Ergonomics working condition with first Aid and sanitation arrangement shall be made for the drivers and other contract workers during construction phase.	Complied
	Safety management plan based on Risk Assessment shall be prepared to limit the Risk exposure to the workers within the plant boundary	All safety measures are taken to avoid/reduce the risk exposure to the workers within the plant boundary. Regularly HITRA is being prepared for all activities.
	Regular mock drills for onsite emergency management plan and Integrated Emergency Response System shall be developed for all kind of possible disaster situation.	Various level (L1, L2 & L3) of mock drills are conducted for emergency management . Emergency management plan prepared considering all type of scenarios and submitted to DISH from time to time.
VIII	**Green belt and Biodiversity Conservation :**	
(i)	Green belt shall be developed in an area of 33% of the total project with indigenous native tree species in accordance with CPCB guidelines .The green belt shall inter- alia cover an entire periphery of the plant .	Complied. Around 123 Ha of green cover provided within Hazira Petrochemical complex which admeasuring ~ 33% of total area.
(ii)	In -situ/ex -situ Conservation Plan for the conservation of Flora and fauna should be prepared and implemented.	Complied. Around 123 Ha of green cover provided within Hazira Petrochemical complex which admeasuring ~33% of total area
(iii)	Suitable screens shall be placed across the intake channel to prevent entrainment of life forms including eggs, larvae, juvenile fish etc during extraction of sea water	Complied
IX	**Waste Management:**	
(i)	Solid waste management should be planned in accordance with extant Solid Waste Management Rules, 2016.	Solid waste is being disposed as per Solid Waste Management Rules, 2016.
(ii)	Toxicity Characteristics Leachate Procedure (TCLP) test shall be conducted for any substance, potential of leaching heavy metals into the surrounding areas as well as into the ground water.	Complied.
(iii)	Ash pond shall be lined with impervious liner as per the soil condition. Adequate dam/dyke safety measures shall also be implemented to protect the ash dyke from getting breached .	This condition is not applicable
(iv)	Fly ash shall be collected in dry form and ash generated shall be used in phased manner as per provisions of the Notifications on Fly ash Utilization issued by the Ministry and amendments thereto . By the end of 4th Year ,100% fly ash utilization should be ensured .	Fly Ash notification is being complied at CCPP. 100 % FA utilization is being achieved during the reporting period.
	Unutilized ash shall be disposed off in the ash Pond in the form of High concentration Slurry .Mercury and other heavy metals (As,Hg,Cr,Pb,etc) will be monitored in the bottom ash as also in the effluent emanating from the existing ash pond. Fly Ash utilization details shall be submitted to the concerned Regional office along with the six -monthly compliance reports and utilization data shall be published on Company's website .	The CCPP has only dry ash collection system and all ash is disposed. Annual ash utilization details are submitted to MoEFCC and a copy of the same is attached herewith as **Annexure -XI**
(v)	Unutilized ash shall be disposed off in the ash pond in the form of High Concentration Slurry/Medium Concentration Slurry /Lean Concentration Slurry method. Ash water recycling system shall be set up to recover supernatant water.	Not Applicable

(vi)	In case of waste to energy plant, major problems related with environment are fire smog in MSW dump site, foul smell and impacts to the surrounding .Therefore, the following measures are required to be taken up .	Not applicable
a.	Water hydrant at all the dump sites of MSW area to be provided so that the fire and smog could be controlled .	Not applicable
b.	Sprayer like microbial consortia may be provided arresting the foul smell emanating from MSW area .	Not applicable
X.	**Monitoring of Compliance:**	
(i)	Environmental Audit of the project be taken up by the third party for preparation of Environmental Statement as per Form V & conditions stipulated in the EC and report be submitted to the Ministry.	Form V is regularly submitted to GPCB. Please Refer Form-V for FY 22-23 as **Annexure-VI**
(ii)	Resettlement and Rehabilitation plan as per the extent rules of Govt. of India and respective State Govt. shall be followed, if applicable	Not applicable
(iii)	Energy conservation plan to be implemented as envisaged in the EIA/EMP report ..	Energy conservations schemes are being implemented as a regular practice.
	Renewable Energy purchase obligation as set by MoP /state Government shall be met either by establishing renewable energy power plant (such as Solar, wind etc) or by purchasing renewable Energy certificates	Complied.
(iv)	Monitoring of carbon emission from the existing power plant as well as for the proposed power project shall be carried out annually from a reputed institute and report be submitted to the Ministry's Regional Office .	GHG emission in terms of CO2 equivalent are regularly monitored for entire plant and verified by third party.
(v)	Energy and water Audit shall be conducted at least once in two years and recommendations arising out of the Report should be followed .A report in this regard shall be submitted to Ministry's Regional Office .	GPCB appointed auditors doing environmental audit of the plant which include water audit compliance on annual basis. Energy audit is being done by third party. Various water & energy conservations scheme are being implemented for existing plants.
(vi)	Environment Cell (EC) shall be constituted by taking members from different division, headed by a qualified person on the subject, who shall be reporting directly to the Head of the project	A separate Environment Cell headed by Environment Head with environment qualification and more than 20 years of experience has been established for environment management activities of existing plant and the same will cater to the need for the expansion projects. The cell is supported by qualified Environment professionals (Env.Engg). Environmental monitoring and analysis done in laboratory.
	The project Proponent shall (Post EC monitoring)	
a.	Send a copy of environmental clearance letter to the heads of Local bodies ,Panchayat, Municipal Bodies and relevant offices of the environment	Copies of the Environmental Clearance submitted to Mora Panchayat, Zilla Parishad/Municipal Corporation, Urban local Body and the local NGO etc.
b.	Upload the clearance letter on the web site of the company as a part of information to the general public .	Condition wise compliance of EC is uploaded on our website.
c.	Upload the public through advertisement within seven days from the date of issue of the clearance letter,at least in two local newspapers that are widely circulated in the region of which one shall	Public have been informed about the grant of Environment clearance through the advertisement in the local newspaper dated 05/11/2022 and copy of advertisement is submitted to ministry .

	be in the vernacular language that the project has been accorded environmental clearance by the Ministry and Copies of the clearance letter are available with the SPCB and may also be seen at website of the Ministry of Environment ,Forest and climate Change (MoEF&CC) at http://parivesh.nic.in	
d.	Upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same periodically .	Six monthly compliance report is submitted to MoEF&CC, Gandhinagar regularly. Last compliance report was submitted vide our letter (696/31052023/HMD/MoEF&CC) dated 31/05/2023 sent through email at iro.gandhingr-mefcc@gov.in dated 01.06.2023.)
e.	Monitor the criteria pollutants level namely; PM (PM10 &PM2.5 in case of ambient AAQ), SO2, NOx (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company;	Ambient air quality monitoring and all stacks emissions quality monitoring is being done regularly and reports are being submitted to GPCB . Online display board provide at main gate to display online ambient air quality and stack emissions for disclosure to the public.
f.	Submit six monthly reports on the status of the compliance of the stipulated environmental conditions including results of monitored data (both in hard copies as well as by e mail) to the Regional office of MoEF&CC ,the respective Zonal office of CPCB and the SPCB .	Six monthly compliance report is submitted to MoEF&CC, Gandhinagar regularly. Last compliance report was submitted vide our letter (696/31052023/HMD/MoEF&CC) dated 31/05/2023 sent through email at iro.gandhingr-mefcc@gov.in dated 01.06.2023).
g.	Submit the environmental statement for each financial Year in Form V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules ,1986, as amended subsequently and put on the website of the company.	Form V is regularly submitted to GPCB. Please Refer Form-V for FY 22-23 as **Annexure-VI**
h.	Inform the Regional office as well as the Ministry, the date of financial closure and final approval of the project and the date of commencement of the land development work.	Not applicable as this project is only operationalization of existing gas based power plant.
XI.	**Corporate Environmental Responsibility (CER) activities:**	
(i)	CER activities will be carried out as per OM No 22-65/2017-IA.III dated 30.09.2020 or as proposed by the PP in reference to public Hearing or as earmarked in the EIA /EMP report along with the detailed scheduled of implementation	RIL-HMD has taken up many activities for the upliftment of nearby community. The same is now undertaken by Reliance Foundation not only in our area but for entire India. Expenditure incurred to comply with the conditions stipulated by MoEF&CC as well as by GPCB during the reporting period is **Rs.29.57 crore** for existing plants.
C.	**General Condition:**	
	The EC granted to the project is strictly under the provisions of the EIA Notification 2006 and its amendments . It does not tantamount/ construe to approvals/ consent / permissions, etc required to be obtained under any other Acts /Rules /Subordinate legislations,etc., as may be applicable to the project	Complied
(ii)	The project proponent shall prepare a site specific conservation plan and wildlife management plan in case of the presence of Schedule -1 species in the study area , as applicable to the project , and submit to Chief Wildlife Warden for approval .	In process of submitting site specific bio-diversity conservation plan of study area to Chief Wildlife Warden.

<table>
<tr><td></td><td>The recommendations shall be implemented in consultation with state Forest/Wildlife Department in a time bound manner.</td><td>Not applicable</td></tr>
<tr><td>(iii)</td><td>No further expansion or modifications in the plant Other than mentioned in EIA notification , 2006 and its amendments , shall be carried out without prior approval of the Ministry of Environment ,Forest and Climate Change. In case of deviations or alterations in the project proposal from those to this Ministry for clearance, a fresh reference shall be made to the Ministry to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.</td><td>Agree to comply</td></tr>
<tr><td>(iv)</td><td>The energy source for lighting purpose shall be preferably LED based , or advance having preference in energy conservation and environment betterment.</td><td>LED bulbs are already used for lighting. Energy conservation schemes are being implemented.</td></tr>
<tr><td>(v)</td><td>The location of ambient air quality monitoring stations shall be decided in consultation with the State Pollution Control Board (SPCB) and it shall be ensured that at least one station each is installed in the upwind and downwind direction as well as where maximum ground level concentrations are anticipated.</td><td>The site has established 7 AAQ monitoring stations within petrochemical complex based on the mathematical modelling studies carried out by NEERI considering wind direction and the maximum ground level concentration. An intimation letter is submitted to GPCB on 03.06.1992.
A Summary of the Ambient Air Quality (AAQ) monitoring results of April’23-Sep’23 are as below:

<table><tr><th>Parameter</th><th>Limits</th><th>Avg</th><th>Min</th><th>Max</th></tr><tr><td>PM10 (ug/m3)</td><td>100</td><td>58.9</td><td>38.0</td><td>78.0</td></tr><tr><td>PM2.5 (ug/m3)</td><td>60</td><td>19.0</td><td>8.8</td><td>28.2</td></tr><tr><td>SO2 (ug/m3)</td><td>80</td><td>20.2</td><td>11.7</td><td>28.1</td></tr><tr><td>NO2 (ug/m3)</td><td>80</td><td>26.7</td><td>16.2</td><td>36.2</td></tr><tr><td>NMHC (ug/m3)</td><td>-</td><td>BDL</td><td>BDL</td><td>BDL</td></tr><tr><td>Benzene (ug/m3) -</td><td>-</td><td>3.7</td><td>2.6</td><td>4.8</td></tr></table>
The values are on 24 hrs average, however the NAAQS specifies annual average for comparison.
Details of AAQ &CAAQMS data can be referred as Annexure-II</td></tr>
<tr><td>(vi)</td><td>The overall noise levels in and around the plant area shall be kept within the standards by providing noise control measures including Acoustic hoods, silencers , enclosures etc. on all sources of noise generation . Th ambient noise levels shall conform to the standards prescribed under Environment (Protection) Act , 1986 Rules , 1989 viz. 75 dB A(day time) and 70 dBA (day time) and 70 dBA (night time) .</td><td>The ambient noise level monitoring is being carried out regularly.
Maximum Noise level found at periphery of RIL HMD in the range of 55.8-69.1 dBA (Leq) during daytime and 53.7- 65.6 dBA (Leq) during nighttime with in reporting period April’23-Sep’23. Noise levels are found well with-in the stipulated norms. Workplace noise levels are monitored and required precautions are taken to avoid exposure.</td></tr>
<tr><td>(vii)</td><td>The Company shall harvest rainwater from the roof tops of the buildings and storm water drains to recharge the ground water and to utilize the same for process requirements</td><td>We have implemented a rainwater collection and storage facility in the existing plants to reduce water drawl from the river to that extent. Surface runoff & roof top rainwater collection scheme is implemented at Rel Pipe plant, POY cooling towers, and Raw Water-2 storm channel. Same will be extended for new projects to reduce freshwater requirements.</td></tr>
</table>

(viii)	Training shall be imparted to all employees on safety and health aspects of Chemicals handling	The chemical handling related safety and health training is imparted to all workers The level-1 and level-2 training is provided to the contract workers which includes the safe work practices related to safe chemical handling and use of PPEs. All RIL Hazira employees are imparted safety training through induction and refresher training on safe work practices, safe chemical handling and use of PPEs.
	Pre-employment and routine periodical medical examinations for all employees shall be undertaken on regular basis. Training to all employees on handling of chemicals shall be imparted.	Pre-employment and periodical medical examination is carried out by OHC on a regular basis and records are maintained as per the Gujarat Factories Act & Rules.
(ix)	The company shall also comply with all the environmental protection measures and safeguards proposed in the documents submitted to the Ministry.	All the environmental protection measures and safeguards proposed in the documents submitted to the ministry are being complied for power plant .
	All the recommendations made in the EIA/EMP in respect of Environment management, and risk mitigation measures relating to the project shall be implemented.	All recommendations made in the EIA/EMP in respect of environment management and risk mitigation measures are being compiled for power plant.
x.	The company shall undertake all relevant measures for improving the socio-economic conditions of the surrounding area.	RIL-HMD has taken up many activities for the up-liftment of nearby community. The same is now being undertaken by Reliance Foundation not only in our area but for entire India.
	CER activities shall be undertaken by involving local villages and administration and shall be implemented	RIL-HMD has taken up many activities for the up-liftment of nearby community. The same is now being undertaken by Reliance Foundation not only in our area but for entire India.
xi.	The company shall undertake eco-developmental measures including community welfare measures in the project area for the overall improvement of the environment.	Various eco-developmental measures like Rain water harvesting, Plantations, training etc have been taken up by Reliance Foundation along with community welfare measures in the project area as well as for entire India.
(xii)	A separate Environment Management Cell (having qualified person with Environmental Science /Environment Engineering /specialization in the project area) equipped with full-fledged laboratory facilities shall be set up to carry out the Environmental Management and Monitoring functions.	A separate Environment Cell headed by Environment Head with environment qualification and more than 20 years of experience has been established for environment management activities of existing plant and the same will cater to the need for the expansion projects. The cell is supported by qualified Environment professionals (Env.Engg). Environmental monitoring and analysis done in laboratory.
(xiii)	The company shall earmark sufficient funds towards capital cost and recurring cost per annum to implement the conditions stipulated by the Ministry of Environment , Forest and Climate Change as well as the State Government along with the implementation schedule for all the conditions stipulated herein.	Adequate funds have been allocated for implementing environmental management and socio-economic activities. Expenditure incurred to comply with the conditions stipulated by MoEF&CC as well as by GPCB during the reporting period is **Rs.29.57 crore** for existing plants. Same will be continued for proposed projects .
	The funds so earmarked for environment management/ pollution control measures shall not be diverted for any other purpose.	Funds allocated for environment management/ pollution control measures are spent for such measures only and are not diverted for any other purpose

(xiv)	A copy of the clearance letter shall be sent by the project proponent to concerned Panchayat , Zilla Parishad / Municipal Corporation , Urban local Body and the local NGO , if any, from whom suggestions /representations, if any , were received while processing the proposal.	Copies of the Environmental Clearance submitted to Mora Panchayat, Zilla Parishad/Municipal Corporation, Urban local Body and the local NGO etc
(xv)	The project proponent shall also submit six monthly reports on the status of compliance of the stipulated Environmental Clearance conditions including results of monitored data (Both in hard copies as well as by e-mail) to the respective Regional Office of MOEF and CC , the respective Zonal Office of CPCB and SPCB. A copy of Environmental Clearance and six monthly compliance status report shall be posted on the website of the company	Six monthly compliance report is submitted to MoEF&CC, Gandhinagar regularly. Last compliance report was submitted vide our letter (696/31052023/HMD/MoEF&CC) dated 31/05/2023 sent through email at iro.gandhingr-mefcc@gov.in dated 01.06.2023.)
(xvi)	The environmental statement for each financial year ending 31st March in Form-V as is mandated shall be submitted to the concerned State Pollution Control Board as prescribed under the Environment Protection) Rules, 1986 , as amended subsequently , shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the respective Regional Offices of MoEF& CC by email	Form V is regularly submitted to GPCB. Please Refer Form-V for FY 22-23 as **Annexure-VI**
(xvii)	The project proponent shall inform the public that project has been accorded environment clearance by the Ministry and copies of the clearance letter are available with the SPCB/Committee and may also be seen at Website of Ministry and at https://parivesh.nic.in/.	Public have been informed about the grant of Environment clearance through the advertisement in the local newspaper dated 05/11/2022 and copy of advertisement is submitted to ministry .
	This shall be advertised within seven days from the date of issue of the clearance letter , at least in two local newspapers that are widely circulated In the region of which one shall be in the vernacular language of the locality concerned and a copy of the same shall be forwarded to the concerned Regional office of the Ministry.	Public have been informed about the grant of Environment clearance through the advertisement in the local newspaper dated 05/11/2022 and copy of advertisement is submitted to ministry .
(xviii)	The project authorities shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of start of the project.	Noted and agree to comply.
(xix)	This Environmental clearance is granted subject to final outcome of Hon'ble Supreme Court of India. Hon'ble High Court, Hon'ble NGT and any other court of Law , if any , as may be applicable to this project.	Noted and agree to comply
14.	The Ministry reserves the right to stipulate additional conditions, if found necessary at subsequent stages and the project proponent, shall implement all the said conditions in a time bound manner.	Noted and agree to comply
	The Ministry may revoke or suspend the environmental clearance, if implementation of any of the above condition is not found satisfactory.	Noted

15.	Concealing factual data or submission of false/fabricated data and failure to comply with any of the condition mentioned above may results in withdrawal of this clearance and attract action under the provision of Environment (Protection) Act ,1986.	Noted
16.	The appeal against this environmental clearance shall lie with the National Green Tribunal, If preferred, within a period of 30 days as prescribed under section 16 of the National Green Tribunal Act, 2010.	Noted
17.	The above conditions will be enforced, inter alia under the provisions of the water (Prevention & Control of Pollution) Act, 1974, the Air (prevention &8 Control of Pollution) Act,1981,the Environment (Protection) Act ,1986 ,the Hazardous waste (Management ,handling and Transboundary Movement)Rules ,2016 and the public Liability Insurance Act ,1991 read with subsequent amendments therein .	Noted
18.	This issues with the approval of the competent authority	Noted

Compliance status for the Environment Clearance File No. J-11011/40/2015-IA II (I) dated 01st Nov 2022 issued for Expansion and Debottlenecking of Existing Petrochemical complex at HMD as on 30-09-2023.

Status: Identified modification for debottlenecking of existing petrochemical complex are being carried out in line with the Environment clearance mentioned above and accordingly application for amendment in Consent to Operate submitted to GPCB . The Proposed new projects viz., Carbon fiber, HTPB, Power from CF & PTA are under design stage during reporting period. Thus, compliance status is provided for plants which are debottlenecked such as Cracker MEG, Relcat, FCP etc.

Sr. No.	Conditions of the Environment clearance Condition	Compliance of the conditions of the Environment
A.	**Specific Conditions**	
(i)	The company shall comply with all the environmental protection measures and safeguards proposed in the documents submitted to the ministry.	All the environmental protection measures and safeguards proposed in the documents submitted to the ministry are complied for units which are debottlenecked. Same will be complied for expansion projects.
	All the recommendations made in the EIA/EMP in respect of environment management and risk mitigation measures relating to the project shall be implemented	All recommendations made in the EIA/EMP in respect of environment management and risk mitigation measures are compiled for units which are debottlenecked.Same will be complied for expansion projects.
(ii)	PP shall comply with all the environmental conditions stipulated in the existing Environment Clearance issued.	All the environmental conditions stipulated in the existing Environment Clearances are being complied. Six monthly compliance report is being submitted to MoEF&CC, RO, Gandhinagar regularly. Last compliance report was submitted vide our letter (696/31052023/HMD/MoEF&CC) dated 31/05/2023 sent through email at iro.gandhingr-mefcc@gov.in dated 01.06.2023.)
(iii)	PP shall conduct 3D modelling studies for determining risk assessment and submit the report within 6 months to ministry.	3D modelling studies will be undertaken once detail engineering of all the proposed new projects get completed.
(iv)	NOC from the concerned Local authority for surface water supply shall be obtained before start of the construction of plant, state pollution control board /Pollution control committees shall not issue the Consent to Operate (CTO) under Air (Prevention and control of pollution) Act and water (Prevention and Control of pollution) Act till the project proponent shall obtain such permission.	Complied. Necessary approval has been obtained from Narmada, Water Resources, water supply and Kalpsar dept of Govt of Gujarat. The average freshwater requirement for the existing RIL-HMD complex was **1,20,261 m3/day (26.7MGD)** during the reporting period.
(v)	As proposed, additional 15 stacks attached to RTOs & DFTOs, and 2 stacks attached to Thermal Oxidizers shall be installed.	Stacks attached to PTA and MEG Thermal Oxidiser are commissioned . Balance stacks are pertaining to Carbon Fiber plant which is yet not commissioned.
	6 Stacks of CPP (HRSG, GT By-Pass) will be operationalized for expansion of CPP capacity.	6 stacks of CPP are already operationalized.
	For the 15 Proposed stacks of Regenerative Thermal Oxidizer with low NOx burners, RTO with low NOx burners and HPCCU shall be provided.	Will be provided as proposed expansion project is yet not commissioned.
(vi)	As Proposed adequate APCM like Cyclone Separator & wet Scrubber, Carbonate Flash Knock out drum, Scrubber, Absorber, Bag Filters and CYC Shall be provided for additional vents, Scrubber.	Adequate APCMs are provided like Cyclone Separator, wet Scrubber, Carbonate Flash Knock out drum, Scrubber, Absorber, Bag Filters and Cyclone separators for existing stacks as per Process requirement of respective plant to control process emissions. The same will be complied with for proposed project.

	Additional 15 stacks attached to packed scrubbers at CF Plant shall be installed.	Will be complied with as detailed engineering is being carried out for the proposed Carbon Fiber.
	Adequate stack height shall be provided to additional stacks for adequate dispersion of emissions.	Will be complied with
(vii)	Total freshwater requirement shall not exceed 21,364 m3/day, proposed to be met from Tapi River.	Will be complied with.
	Necessary permission in this regard shall be obtained from the Concerned regulatory authority.	Will be complied with. Necessary approval has been obtained from Narmada, Water Resources, water supply and Kalpsar dept of Govt of Gujarat. The average freshwater requirement for the existing RIL-HMD complex was **1,20,261 m3/day (26.7MGD** during the reporting period.
	The Fresh water requirement shall be reduced after installation of rainwater harvesting system in the unit/project area.	We have implemented a rainwater collection and storage facility in the existing plants to reduce water drawl from the river to that extent. Surface runoff & roof top rainwater collection scheme is implemented at locations as per feasibility. Same will be extended for new projects to reduce freshwater requirements.
(viii)	PP shall increase the recycle quantity of treated effluent from the expansion projects (~11,000 m3/day) to 50 % in 3 Years from the date of issue of EC from the proposed project.	Treated effluent is being recycled as cooling water make up and DM water production etc. in existing plants. Average effluent recycled for the period of **April'23-Sep'23** is:**10,680 m3 /day (18.97%).** Recycle target for treated effluent from the expansion projects is being built in the design.
(ix)	Comprehensive water audit to be conducted on annual basis and report to the concerned Regional Office of MEE&CC. Outcome from the report to be implemented for conservation scheme.	A separate Water Cell is existed in Central Technical Services (CTS) department who dedicatedly doing day to day water consumption monitoring and auditing activities in existing petrochemical complex. The cell is supported by qualified engineers. Various water conservation scheme known as "WATCON" are being implemented throughout the plant based on such review / audits and the same have been tracked for its performance. The same practice will cater to the need for the expansion projects.
(x)	Process effluent /any wastewater shall not be allowed to mix with storm water. Storm water drain shall be Passed through guard pond.	Will be complied for proposed projects which are yet not commissioned.
(xi)	Hazardous chemicals shall be stored in tanks, tank farms, drums, carboys etc .	Hazardous chemicals being stored as per suitability of chemicals in tanks, drums, carboys etc for existing plant and the same will be complied for proposed project.
	Flame arrestors shall be provided on tank farms, and solvent transfer to be done through pumps.	Flame arrestors installed as per requirement of process in all existing plants. Same will be complied for proposed projects.
(xii)	Process organic residue and spent carbon, if any, shall be sent to cement industries.	Wastes generated from existing plants, such as Organic residue and Spent carbon are disposed for co-processing in cement plants. During the reporting period, **April'23-Sep'23**: Organic Residue : 350.15 MT Spent Carbon : Nil Disposal is being done as per GPCB authorization.

		Same will be complied for proposed project.
	ETP sludge, process inorganic & evaporation salt shall be disposed off to the TSDF.	ETP sludge, is being disposed off to the TSDF from existing plants. During the reporting period, **219.07 MT** ETP sludge sent to the TSDF for disposal. Same practice will be continued for proposed project.
	The Ash from boiler shall be sold to brick manufacturers/cement industry.	This condition is not applicable for the proposed DBN and expansion projects.
(xiii)	Regular VOC monitoring shall be done at vulnerable points	VOC's are being regularly monitored in the existing plants through PID meters at non-point sources. The same practice will be extended for proposed projects.
(xiv)	The oily sludge shall be subjected to melting pit for oil recovery and the residue shall be bio-remediated	Oily sludge is being collected and regularly disposed to cement industries for co processing. Same practice will be extended to new projects.
	The Sludge shall be stored in HDPE lined pit with proper leachate collection.	Sludge is being collected in impermeable pit with proper leachate collection system. Same practice will be extended for proposed projects.
(xv)	Oil catches /oil traps shall be provided at all possible location in rain /storm water drainage system inside the factory premises.	Catchers/oil traps (under/overflow flow & blocking gates) are provided at all possible locations in existing plants for prevention of oil carryover and recovery of oil. Same will be taken care for proposed projects.
(xvi)	**The company shall undertake waste minimization measures as below:**	
a)	Metering and control of quantities of active ingredients to minimize waste.	We have adopted Best Available Technology, which minimizes wastes & emissions. Same will be carried out for proposed projects. All these points are being done as a process / operation requirement for existing plants.
b)	Reuse of by products from the process of raw materials or as raw materials substitute in other processes	
c)	Use of automated filling to minimize spillage	
d)	Use of close feed system into batch reactors	
e)	Venting equipment through vapour recovery system	
f)	Use of high pressure hoses for equipment cleaning etc to reduce waste water generation	
(xvii)	The green belt of 5-10 no.width shall be developed in more than 33 % of the total project area, mainly along the plant periphery, in downward wind direction, and along road sides etc.	Complied. Around 123 Ha of green cover provided within Hazira Petrochemical complex which ~33% of total area.
	Selection of plant species shall be as per the CPCB guidelines in consultation with the state forest department	Plant species is being selected as per CPCB guidelines.
(xviii)	PP shall ensure that additional greenbelt development will be completed within 2 Years.	Will be complied. Around 123 ha of green cover provided within Hazira Petrochemical complex.
	Further PP shall ensure land is available to Forest department for green belt development & maintained properly	Required payment already made to forest dept for 50 Ha of plantation towards Green belt development / carbon sink enhancement on forest land of villages Suvali, Hazira & Bhatlai nearest to RIL Hazira.
(xix)	As per Ministry OM dated 30.09.2020 superseding the OM dated 01.05.2018 regarding the Corporate Environmental Responsibility (Rs 1.0 Crores) and as per the action plan proposed by the project proponent to address the socio economic and environmental issues in the study area, the project proponent ,as committed ,shall provide education funds in technical training centers /support in nearby village's schools ,support in health care facilities	Complied. RIL Foundation undertakes various developmental programs aimed at upliftment, infrastructure, education, health, and other social activities in nearby villages of our plant area. In addition, Reliance Foundation also carries out CSR activities on a nationwide scale.

	,drinking water supply and funds for miscellaneous activities like solar street lights ,battery, Solar panel etc in the nearby villages .	
	The action plan shall be completed within time as proposed .	Will be complied with
(xx)	The project proponent shall ensure 70% of the employment to the local people,as per the applicable law	Complied. Employment are given to local people as per applicable laws in existing plants. Same will be continued for proposed projects.
	The project proponent shall set up a skill development center/provide skill development training to village people .	For the Skill development various initiatives were taken such as Capacity building exercise conducted by RIL HMD for the locals which was named "**Project Samarthya"** at SVNIT Engineering College, Surat. Such type of initiatives will be continued in future as well.
(xxi)	A separate environment Management Cell (having qualified person with Environment Science /Environmental Engineering /specialization in the project area) equipped with full fledged laboratory facilities shall be set up to carry out the Environmental Management and monitoring functions.	A separate Environment Cell headed by Environment Head with environment qualification and more than 20 years of experience has been established for environment management activities of existing plant and the same will cater to the need for the expansion projects. The cell is supported by qualified Environment professionals (Env.Engg). Environmental monitoring and analysis done in laboratory.
	EMC head shall report directly to Head of organization /managing Directors /CEO as per company hierarchy .	Environment Head reports to Site President.
(xxii)	The Unit shall make the arrangement for protection of possible fire hazards during manufacturing process in material handling.	Adequate arrangement for protection from possible fire and explosion hazards are provided in manufacturing and material handling processes for existing plants. Same will be complied for proposed projects.
	Firefighting system shall be as per norms.	Fire Fighting system are provided as per standards for existing plants. Same will be complied for proposed projects.
(xxiii)	Continuous online (24*7) monitoring system for stack emission shall be installed for measurement of flue gas discharge and the pollutants concentrations and the data to be transmitted to the CPCB and SPCB server.	Continuous Online monitoring system for stack emission provided for measurement of flue gas discharge and the pollutant concentrations in existing Plants with connectivity to CPCB /GPCB server. Will be complied for proposed projects.
	In case of the treated effluent to be utilize for irrigation/gardening, real time monitoring system shall be installed at ETP outlet.	Presently treated effluent is being utilized for cooling tower make up /DM water production. Real time monitoring system installed at ETP outlet with connectivity to CPCB /GPCB server.
(xxiv)	PP to set up occupational health center for surveillance of the worker's health within and outside the plant on a regular basis.	Occupational Health Centre is already established at the existing plant. Occupational health surveillance of the workers is being done, and its records are maintained for existing plants. Same practice will be extended for upcoming projects.
	The health data shall be used in deploying the duties of the workers.	Pre-employment and periodical medical examination is carried out on a regular basis for employees & contractors and records are maintained as per the Gujarat Factories Act & Rules. Periodical medical check-up done for the RIL employees as well as contractors' workers and records maintained for existing facility. Same practice will be extended for proposed projects.
	All workers & employees shall be provide with required safety kits/mask for personal protection.	Required PPEs are provided to everyone and also job specific PPEs are provided to working people. Same practice will be complied for the new projects

<table>
<tr><td>(xxv)</td><td>The National Emission standard for petrochemical (Basic & intermediates) issues by the ministry vide G.S.R 820 (E) dated 9th November 2012 as amended time to time shall be followed .</td><td>Gaseous emissions from process units are monitored on monthly basis through MoEF&CC approved laboratory and its result indicate conformance to the GPCB prescribed standards.
A summary of the gaseous emissions from various process stacks for the reporting period April’23-Sep’23 is presented below:

<table>
<tr><th>Parameter</th><th>Limits</th><th>Avg.</th><th>Min</th><th>Max</th></tr>
<tr><td>PM (mg/Nm3)</td><td>150</td><td>11.1</td><td>0.95</td><td>92.5</td></tr>
<tr><td>SO2 (mg/Nm3)</td><td>1700</td><td>7.6</td><td>NIL</td><td>112.1</td></tr>
<tr><td>NOx (mg/Nm3)</td><td>450</td><td>67.2</td><td>9.4</td><td>184.2</td></tr>
<tr><td>HCl (mg/Nm3)</td><td>20</td><td>1.14</td><td>NIL</td><td>5.15</td></tr>
<tr><td>Cl2 (mg/Nm3)</td><td>9</td><td>BDL</td><td>BDL</td><td>BDL</td></tr>
<tr><td>HC (mg/Nm3)</td><td>15</td><td>BDL</td><td>BDL</td><td>BDL</td></tr>
</table>

Parameters also monitored periodically as per EPA 4th amendment rules. Same will be complied with during the new projects. Monitoring will be done as per applicable standards.
Pls refer detailed Stack Monitoring report as Annexure-I.</td></tr>
<tr><td>(xxvi)</td><td>Recommendations of mitigation measures from possible accident shall be implemented based on risk assessment studies conducted for worst case scenarios using latest techniques.</td><td>All recommendations of mitigation measures made in the EIA/EMP report implemented for existing plants that have undergone DBN. Same will be complied for the proposed projects.</td></tr>
<tr><td>(xxvii)</td><td>The project proponent shall develop R&D facilities to develop their own technologies for propylene and polypropylene processing.</td><td>We have a full-fledged R&D Dept who is developing different type of products and chemicals.</td></tr>
<tr><td>(xxviii)</td><td>PP shall sensitize and create awareness among the people working within the project area as well as its surrounding area on the ban of Single use plastic in order to ensure the compliance of Notification published by MoEFCC on 12th August 2021 .</td><td>Being complied with.</td></tr>
<tr><td></td><td>A report along with photographs on the measures taken shall also be included in the six-monthly compliance report being submitted to concerned authority</td><td>Will be included once the construction work of the proposed project started</td></tr>
<tr><td>B.</td><td>General Condition:</td><td></td></tr>
<tr><td>(i)</td><td>No further expansion or modification in the plant, other than mentioned in the EIA Notification ,2006 and its amendments, shall be carried out without prior approval of the Ministry of Environment, Forest and Climate Change/SEIAA, as applicable.</td><td>Noted</td></tr>
<tr><td></td><td>In case of deviations or alterations in the project proposal from those submitted to this Ministry for clearance, a fresh reference shall be made to the Ministry/SEIAA, as applicable, to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.</td><td>Noted</td></tr>
<tr><td>(ii)</td><td>The energy source for lighting purpose shall be preferably LED based ,or advance having preference in energy conservation and environment betterment .</td><td>LED bulbs are already being used for lighting. Energy conservation schemes are being implemented.
Same will be complied for proposed projects.</td></tr>
</table>

(iii)	The overall noise levels in and around the plant area shall be kept well within the standards by providing noise control measures including acoustic hoods, silencers, enclosures etc on all sources of noise generation.	Low noise generating equipment have been selected in the design stage itself. Noise control measures such as acoustic hoods, silencers etc. are provided at high noise generating source within the plant.
	The ambient noise levels shall conform to the standards prescribed under the Environment (Protection) Act, 1986 Rules vix.75dBA(day time) and 70 dBA(night time).	The ambient noise level monitoring is being carried out regularly. Maximum Noise level found at periphery of RIL HMD in the range of **55.8-69.1 dBA (Leq) during daytime and 53.7- 65.6 dBA (Leq**) during night time with in reporting period **April'23-Sep'23** Noise levels are found well with-in the stipulated norms. Workplace noise levels are monitored and required precautions are taken to avoid exposure.
(IV)	The company shall undertake all relevant measures for improving the socio-economic conditions of the surrounding area.	Complied as all relevant measures for improvement of socio-economic condition has been taken up by Reliance Foundation in surrounding area.
	CER activities shall be undertaken by involving local village and administration and shall be implemented.	Complied.
	The company shall undertake eco -developmental measures including community welfare measures in the project area for the overall improvement of the environment.	Various eco-developmental measures like Rain water harvesting, Plantations, training etc have been taken up by Reliance Foundation along with community welfare measures in the project area as well as for entire India.
(v)	The company shall earmark sufficient funds towards capital cost and recurring cost per annum to implement the condition stipulated by the Ministry of Environment, Forest and Climate Change as well as the state Government along with the implemented schedule for all the conditions stipulated herein.	Adequate funds have been allocated for implementing environmental management and socio-economic activities. Expenditure incurred to comply with the conditions stipulated by MoEF&CC as well as by GPCB during the reporting period is **Rs.29.57 crore** for existing plants. Same will be continued for proposed projects
	The funds so earmarked for environment management /pollution control measures shall not be diverted for any other purpose.	Funds allocated for environment management/ pollution control measures are spent for such measures only and are not diverted for any other purpose.
(vi)	A copy of the clearance letter shall be sent by the project proponent to concerned panchayat, Zilla Parishad/Municipal Corporation, Urban local body and the local NGO, If any, from whom suggestions /representations, if any, were received while processing the proposal.	Copies of the Environmental Clearance submitted to Mora Panchayat, Zilla Parishad/Municipal Corporation, Urban local Body and the local NGO etc
(vii)	The Project proponent shall also submit six monthly reports on the status of compliance of the stipulated Environmental Clearance conditions including results of monitored data (both in hard copies as well as by e mail) to the respective Regional office of MoEF &CC , the respective Zonal office of CPCB and SPCB	Six monthly compliance report is submitted to MoEF&CC, Gandhinagar regularly. Last compliance report was submitted vide our letter (696/31052023/HMD/MoEF&CC) dated 31/05/2023 sent through email at iro.gandhingr-mefcc@gov.in dated 01.06.2023.)
	A copy of Environmental Clearance and six-monthly compliance status report shall be posted on the website of the company	Six monthly compliance report is submitted to MoEF&CC, Gandhinagar regularly. Last compliance report was submitted vide our letter (696/31052023/HMD/MoEF&CC) dated 31/05/2023 sent through email at iro.gandhingr-mefcc@gov.in dated 01.06.2023.)
(viii)	The Environmental statement for each financial year ending 31st March in Form V as is mandated shall be submitted to the concerned state pollution	Form V is regularly submitted to GPCB. Please Refer Form-V for FY 22-23 as **Annexure-VI**.

	Control Board as prescribed under the Environment (Protection) Rules ,1986 as amended subsequently shall also be put on the website of the company along with the status of compliance of environmental clearance conditions shall also be sent to the respective Regional Office of MoEF&CC by e mail .	
(ix)	The project proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB/committee and may also be seen at website of the Ministry and at **ttps://parivesh.nic.in** .	Public have been informed about the grant of Environment clearance through the advertisement in the local newspaper dated 05/11/2022 and copy of advertisement is submitted to ministry .
	This shall be advertised within seven days from the date of issue of the clearance letter ,at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locally concerned and a copy of the same shall be forwarded to the concerned Regional officer of the Ministry.	Public have been informed about the grant of Environment clearance through the advertisement in the local newspaper dated 05/11/2022 and copy of advertisement is submitted to ministry.
(X)	The project authorities shall inform the regional office as well as the Ministry the date of financial closure and final approval of the project by the concerned authorities and the date of start of the project.	Noted
(XI)	This Environmental Clearance is granted subject to final outcome of Hon'ble Supreme Court of India, Hon'able High Court, Hon'ble NGT and any other Court of Law, If any, as may be applicable to this project .	Noted
19.	The Ministry reserves the right to stipulate additional conditions, if found necessary at subsequent stages and the project proponent, shall implement all the said conditions in a time bound manner.	Noted
	The Ministry may revoke or suspend the environmental clearance, if implementation of any of the above condition is not found satisfactory.	Noted
20	Concealing factual data or submission of false/fabricated data and failure to comply with any of the condition mentioned above may results in withdrawal of this clearance and attract action under the provision of Environment (Protection) Act ,1986.	Noted
21	The appeal against this environmental clearance shall lie with the National Green Tribunal, If preferred, within a period of 30 days as prescribed under section 16 of the National Green Tribunal Act, 2010.	Noted
22.	The above conditions will be enforced, inter alia under the provisions of the water (Prevention & Control of Pollution) Act, 1974, the Air (prevention &8 Control of Pollution) Act,1981,the Environment (Protection) Act ,1986 ,the Hazardous waste (Management ,handling and Transboundary Movement)Rules ,2016 and the public Liability Insurance Act ,1991 read with subsequent amendments therein.	Noted
23	This issues with the approval of the competent authority	Noted

Stack Emission Data							Annexure -I		
PP Plant	**Apr-23**	**May-23**	**Jun-23**	**Jul-23**	**Aug-23**	**Sep-23**	**Min.**	**Max.**	**Average**
Vent Absorber									
HCl in mg/Nm3	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL	NIL
Rotary Kiln	**Apr-23**	**May-23**	**Jun-23**	**Jul-23**	**Aug-23**	**Sep-23**	**Min.**	**Max.**	**Average**
Particulate Matter mg/Nm3	*	*	*	*	*	*	*	*	*
SO2 in PPM	*	*	*	*	*	*	*	*	*
NOx in PPM	*	*	*	*	*	*	*	*	*

Remark:
The sign " * " Indicate that the particular stack was not in operation during that period .

Stack Emission Data								Annexure-I	
PVC &VCM Plant	**Apr-23**	**May-23**	**Jun-23**	**Jul-23**	**Aug-23**	**Sep-23**	**Min.**	**Max.**	**Average**
DRYER LINE -I									
Particulate Matter mg/Nm3	21.03	16.49	63.41	81.34	56.78	14.59	14.59	81.34	42.27
DRYER LINE -II									
Particulate Matter mg/Nm3	17.87	21.25	23.15	79.66	37.72	43.34	17.87	79.66	37.17
EDC Cracking Furnace - A									
Particulate Matter mg/Nm3	4.67	4.15	4.49	3.92	3.58	4.13	3.58	4.67	4.16
HC in mg/Nm3	NIL	NIL	NIL	NIL	NIL	NIL	BDL	BDL	BDL
HCl in mg/Nm3	BDL	BDL	BDL	BDL	BDL	BDL	NIL	NIL	NIL
Cl2 in mg/Nm3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
EDC Cracking Furnace -B									
Particulate Matter mg/Nm3	4.32	4.53	4.25	4.23	4.00	4.03	4.00	4.53	4.23
HC in mg/Nm3	NIL	NIL	NIL	NIL	NIL	NIL	BDL	BDL	BDL
HCl in mg/Nm3	BDL	BDL	BDL	BDL	BDL	BDL	NIL	NIL	NIL
Cl2 in mg/Nm3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
EDC Cracking Furnace -C									
Particulate Matter mg/Nm3	5.53	4.65	5.51	4.49	5.42	4.88	4.49	5.53	5.08
HC in mg/Nm3	NIL	NIL	NIL	NIL	NIL	NIL	BDL	BDL	BDL
HCl in mg/Nm3	BDL	BDL	BDL	BDL	BDL	BDL	NIL	NIL	NIL
Cl2 in mg/Nm3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
VCM Incinerator									
Particulate Matter mg/Nm3	14.51	9.92	9.45	5.23	21.16	9.52	5.23	21.16	11.63
HCl in mg/Nm3	5.15	5.15	5.15	5.15	5.15	5.15	5.15	5.15	5.15
Cl2 in mg/Nm3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Remark: BDL - Below Detectable Limit ,Min. Detectable limit for Cl2 > 0.07 mg/NM3,Min. HC > 6.54 mg/NM3

Stack Emission Data								Annexure-I	
PE Plant:	**Apr-23**	**May-23**	**Jun-23**	**Jul-23**	**Aug-23**	**Sep-23**	**Min.**	**Max.**	**Average**
DTA Vaporiser Stack - AX & BX									
Particulate Matter mg/Nm3	10.14	10.28	7.87	5.49	6.28	8.18	5.49	10.28	8.04
SO2 in mg/Nm3	8.00	4.80	8.00	6.41	9.61	8.00	4.80	9.61	7.47
NOx in mg/Nm3	115.14	107.47	99.79	95.95	115.14	111.31	95.95	115.14	107.47
DTA Vaporiser Stack - CX									
Particulate Matter mg/Nm3	3.97	3.35	7.49	4.34	5.43	7.36	3.35	7.49	5.32
SO2 in mg/Nm3	6.41	8.00	6.41	4.80	6.41	4.80	4.80	8.00	6.14
NOx in mg/Nm3	88.28	84.44	88.28	80.60	88.28	92.12	80.60	92.12	87.00
Alumina Handling Unit									
Particulate Matter mg/Nm3	*	*	*	*	*	*	*	*	*

Relpippe Plant									
Unloading Hopper	**Apr-23**	**May-23**	**Jun-23**	**Jul-23**	**Aug-23**	**Sep-23**	**Min.**	**Max.**	**Average**
Particulate Matter mg/Nm3	5.96	4.14	4.53	4.81	4.16	4.23	4.14	5.96	4.64
Remark: The sign " * " Indicates that the particular stack was not in operation that period .									

Stack Emission Data							Annexure -I		
CPP&U:	**Apr-23**	**May-23**	**Jun-23**	**Jul-23**	**Aug-23**	**Sep-23**	**Min**	**Max**	**Averag e**
HRSG -I									
Particulate Matter (mg/Nm3)	*	*	*	*	*	*	*	*	*
SO2 (mg/Nm3)	*	*	*	*	*	*	*	*	*
NOx (mg/Nm3)	*	*	*	*	*	*	*	*	*
HRSG -II									
Particulate Matter (mg/Nm3)	*	*	*	*	*	*	*	*	*
SO2 (mg/Nm3)	*	*	*	*	*	*	*	*	*
NOx (mg/Nm3)	*	*	*	*	*	*	*	*	*
HRSG -III									
Particulate Matter (mg/Nm3)	*	*	*	*	*	*	*	*	*
SO2 (mg/Nm3)	*	*	*	*	*	*	*	*	*
NOx (mg/Nm3)	*	*	*	*	*	*	*	*	*
HRSG -IV									
Particulate Matter (mg/Nm3)	*	*	*	*	*	*	*	*	*
SO2 (mg/Nm3)	*	*	*	*	*	*	*	*	*
NOx (mg/Nm3)	*	*	*		*	*	*	*	*
HRSG -V									
Particulate Matter (mg/Nm3)	*	*	*	*	*	*	*	*	*
SO2 (mg/Nm3)	*	*	*	*	*	*	*	*	*
NOx (mg/Nm3)	*	*	*	*	*	*	*	*	*
HRSG -VI									
Particulate Matter (mg/Nm3)	*	*	*	*	*	*	*	*	*
SO2 (mg/Nm3)	*	*	*	*	*	*	*	*	*
NOx (mg/Nm3)	*	*	*	*	*	*	*	*	*
HRSG -VIII									
Particulate Matter (mg/Nm3)	*	*	*	*	*	*	*	*	*
SO2 (mg/Nm3)	*	*	*	*	*	*	*	*	*
NOx (mg/Nm3)	*	*	*	*	*	*	*	*	*
HRSG -IX									
Particulate Matter (mg/Nm3)	*	*	*	*	*	*	*	*	*
SO2 (mg/Nm3)	*	*	*	*	*	*	*	*	*
NOx (mg/Nm3)	*	*	*	*	*	*	*	*	*
Remark:The sign " * " Indicate that the particular stack was not in operation during that									

Stack Emission Data								**Annexure-I**	
POY:	**Apr-23**	**May-23**	**Jun-23**	**Jul-23**	**Aug-23**	**Sep-23**	**Min**	**Max**	**Average**
DOW Vaporiser A									
Particulate Matter (mg/Nm3)	4.80	2.82	5.17	4.21	4.62	4.15	2.82	5.17	4.30
SO2 (mg/Nm3)	6.41	NIL	3.20	4.80	3.20	4.80	NIL	6.41	4.48
NOx (mg/Nm3)	72.92	38.38	76.76	65.25	69.09	72.92	38.38	76.76	65.89
DOW Vaporiser B									
Particulate Matter (mg/Nm3)	5.19	4.96	4.49	4.40	4.99	*	4.40	5.19	4.81
SO2 (mg/Nm3)	4.80	4.80	4.80	3.20	4.80	*	3.20	4.80	4.48
NOx (mg/Nm3)	76.76	80.60	72.92	80.60	76.76	*	72.92	80.60	77.53
DOW Vaporiser C									
Particulate Matter (mg/Nm3)	5.57	4.55	4.66	9.07	4.43	4.76	4.43	9.07	5.51
SO2 (mg/Nm3)	3.20	3.20	4.80	6.41	8.00	6.41	3.20	8.00	5.34
NOx (mg/Nm3)	80.60	72.92	69.09	72.92	72.92	80.60	69.09	80.60	74.84
DOW Vaporiser D									
Particulate Matter (mg/Nm3)	7.32	5.91	6.16	5.46	7.32	6.75	5.46	7.32	6.49
SO2 (mg/Nm3)	11.21	12.81	11.21	6.41	12.81	11.21	6.41	12.81	10.94
NOx (mg/Nm3)	95.95	92.12	88.28	95.95	92.12	95.95	88.28	95.95	93.40
DOW Vaporiser E									
Particulate Matter (mg/Nm3)	4.70	4.69	4.89	10.04	*	4.48	4.48	10.04	5.76
SO2 (mg/Nm3)	4.80	1.60	6.41	14.41	*	8.00	1.60	14.41	7.04
NOx (mg/Nm3)	69.09	76.76	65.25	69.09	*	84.44	65.25	84.44	72.93
DOW Vaporiser F									
Particulate Matter (mg/Nm3)	4.99	3.93	3.76	4.53	3.82	3.64	3.64	4.99	4.11
SO2 (mg/Nm3)	3.20	1.60	1.60	3.20	1.60	3.20	1.60	3.20	2.40
NOx (mg/Nm3)	61.41	57.57	53.73	61.41	53.73	57.57	53.73	61.41	57.57
NG-3									
HTF-I									
Particulate Matter (mg/Nm3)	62.60	-	5.38	5.34	4.80	4.52	4.52	62.60	16.53
SO2 (mg/Nm3)	105.70	-	8.00	4.80	6.41	4.80	4.80	105.70	25.94
NOx (mg/Nm3)	161.20	-	95.95	88.28	80.60	76.76	76.76	161.20	100.56
HTF-II									
Particulate Matter (mg/Nm3)	4.80	5.06	*	*	4.78	5.16	4.78	5.16	4.95
SO2 (mg/Nm3)	3.20	6.41	*	*	8.00	6.41	3.20	8.00	6.01
NOx (mg/Nm3)	69.09	88.28	*	*	76.76	84.44	69.09	88.28	79.64
HTF-III									
Particulate Matter (mg/Nm3)	5.45	4.63	5.06	4.83	5.26	*	4.63	5.45	5.05
SO2 (mg/Nm3)	6.41	4.80	6.41	8.00	9.61	*	4.80	9.61	7.05
NOx (mg/Nm3)	84.44	76.76	80.60	76.76	88.28	*	76.76	88.28	81.37
Remark: The sign " * " Indicates that the particular stack was not in operation that period .									

Stack Emission Data **Annexure -I**

CP10/11:	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Min	Max	Average
DOW Vaporiser A									
Particulate Matter (mg/Nm3)	5.90	5.17	5.87	6.94	5.83	4.95	4.95	6.94	5.78
SO2 (mg/Nm3)	11.21	12.81	14.41	12.81	11.21	4.80	4.80	14.41	11.21
NOx (mg/Nm3)	92.12	95.95	99.79	95.95	92.12	76.76	76.76	99.79	92.12
DOW Vaporiser B									
Particulate Matter (mg/Nm3)	75.88	4.77	5.03	5.32	4.64	5.40	4.64	75.88	16.84
SO2 (mg/Nm3)	112.10	4.80	3.20	4.80	3.20	6.41	3.20	112.10	22.42
NOx (mg/Nm3)	172.72	80.60	72.92	69.09	72.92	69.09	69.09	172.72	89.56
DOW Vaporiser C									
Particulate Matter (mg/Nm3)	5.41	4.34	4.74	3.91	5.06	5.24	3.91	5.41	4.78
SO2 (mg/Nm3)	4.80	6.41	4.80	6.41	6.41	4.80	4.80	6.41	5.61
NOx (mg/Nm3)	76.76	72.92	76.76	72.92	76.76	80.60	72.92	80.60	76.12
Heater -I									
Particulate Matter (mg/Nm3)	4.80	5.55	3.89	4.92	4.34	4.20	3.89	5.55	4.62
SO2 (mg/Nm3)	4.80	3.20	3.20	1.60	3.20	3.20	1.60	4.80	3.20
NOx (mg/Nm3)	80.60	76.76	69.09	76.76	65.25	72.92	65.25	80.60	73.56
Heater -II									
Particulate Matter (mg/Nm3)	54.01	4.53	30.70	4.31	4.60	4.60	4.31	54.01	17.13
SO2 (mg/Nm3)	105.70	3.20	1.60	1.60	4.80	3.20	1.60	105.70	20.02
NOx (mg/Nm3)	184.23	69.09	88.28	65.25	76.76	84.44	65.25	184.23	94.68
Heater -III									
Particulate Matter (mg/Nm3)	4.51	4.24	*	4.66	4.18	5.96	4.18	5.96	4.71
SO2 (mg/Nm3)	1.60	4.80	*	3.20	3.20	9.61	1.60	9.61	4.48
NOx (mg/Nm3)	61.41	65.25	*	80.60	69.09	92.12	61.41	92.12	73.69

Stack Emission Data								Annexure-I	
Cracker Plant	**Apr-23**	**May-23**	**Jun-23**	**Jul-23**	**Aug-23**	**Sep-23**	**Min**	**Max**	**Average**
Fresh Feed Furnace H -110									
Particulate Matter (mg/Nm3)	4.51	4.94	4.21	4.51	4.96	4.86	4.21	4.96	4.67
SO2 (mg/Nm3)	4.80	8.00	6.41	4.80	8.00	9.61	4.80	9.61	6.94
NOx (mg/Nm3)	80.60	72.92	65.25	76.76	84.44	95.95	65.25	95.95	79.32
Fresh Feed Furnace H -120									
Particulate Matter (mg/Nm3)	4.88	4.57	4.80	3.93	4.72	4.96	3.93	4.96	4.64
SO2 (mg/Nm3)	8.00	4.80	8.00	3.20	6.41	8.00	3.20	8.00	6.40
NOx (mg/Nm3)	99.79	76.76	72.92	69.09	76.76	88.28	69.09	99.79	80.60
Fresh feed Furnace H -130									
Particulate Matter (mg/Nm3)	4.65	4.67	4.11	4.25	4.81	4.81	4.11	4.81	4.55
SO2 (mg/Nm3)	3.20	6.41	4.80	4.80	8.00	9.61	3.20	9.61	6.14
NOx (mg/Nm3)	69.09	80.60	76.76	65.25	88.28	92.12	65.25	92.12	78.68
Fresh Feed Furnace H -140									
Particulate Matter (mg/Nm3)	4.75	3.69	4.50	4.84	4.32	4.27	3.69	4.84	4.40
SO2 (mg/Nm3)	1.60	1.60	6.41	8.00	4.80	6.41	1.60	8.00	4.80
NOx (mg/Nm3)	65.25	69.09	61.41	80.60	72.92	65.25	61.41	80.60	69.09
Fresh Feed Furnace -150									
Particulate Matter (mg/Nm3)	4.93	3.52	4.76	4.87	3.47	4.66	3.47	4.93	4.37
SO2 (mg/Nm3)	3.20	1.60	8.00	6.41	1.60	6.41	1.60	8.00	4.54
NOx (mg/Nm3)	57.57	65.25	80.60	88.28	69.09	84.44	57.57	88.28	74.21
Fresh Feed Furnace H -160									
Particulate Matter (mg/Nm3)	4.38	4.78	4.91	4.64	4.04	4.92	4.04	4.92	4.61
SO2 (mg/Nm3)	9.61	3.20	9.61	6.41	3.20	8.00	3.20	9.61	6.67
NOx (mg/Nm3)	72.92	84.44	88.28	61.41	65.25	80.60	61.41	88.28	75.48
Fresh Feed Furnace H -170									
Particulate Matter (mg/Nm3)	4.25	4.02	4.94	3.24	4.90	4.51	3.24	4.94	4.31
SO2 (mg/Nm3)	6.41	1.60	6.41	8.00	6.41	4.80	1.60	8.00	5.61
NOx (mg/Nm3)	80.60	57.57	80.60	99.79	84.44	80.60	57.57	99.79	80.60
Fresh Feed Furnace H -180									
Particulate Matter (mg/Nm3)	4.44	4.78	4.63	4.38	4.08	3.80	3.80	4.78	4.35
SO2 (mg/Nm3)	3.20	3.20	4.80	6.41	3.20	1.60	1.60	6.41	3.74
NOx (mg/Nm3)	53.73	65.25	76.76	72.92	76.76	69.09	53.73	76.76	69.09
Fresh Feed Furnace H -190									
Particulate Matter (mg/Nm3)	4.84	4.94	4.46	4.90	4.24	*	4.24	4.94	4.68
SO2 (mg/Nm3)	4.80	4.80	3.20	8.00	4.80	*	3.20	8.00	5.12
NOx (mg/Nm3)	72.92	69.09	72.92	69.09	65.25	*	65.25	72.92	69.85
Fresh Feed Furance H -192									
Particulate Matter (mg/Nm3)	4.71	4.81	4.10	4.43	3.89	4.26	3.89	4.81	4.37
SO2 (mg/Nm3)	3.20	4.80	1.60	4.80	3.20	3.20	1.60	4.80	3.47
NOx (mg/Nm3)	65.25	72.92	57.57	65.25	69.09	72.92	57.57	72.92	67.17
Fresh Feed Furnace H -194									
Particulate Matter (mg/Nm3)	4.52	4.56	3.68	4.95	4.67	4.78	3.68	4.95	4.53
SO2 (mg/Nm3)	4.80	6.41	1.60	9.61	6.41	8.00	1.60	9.61	6.14
NOx (mg/Nm3)	69.09	84.44	53.73	80.60	80.60	84.44	53.73	84.44	75.48

Cracker Plant							**Min**	**Max**	**Average**
Fresh Feed Furnace H -196									
Particulate Matter (mg/Nm3)	4.95	4.67	*	4.84	4.35	4.88	4.35	4.95	4.74
SO2 (mg/Nm3)	8.00	9.61	*	8.00	8.00	9.61	8.00	9.61	8.64
NOx (mg/Nm3)	95.95	88.28	*	84.44	88.28	92.12	84.44	95.95	89.81
Recycled Feed Furnace H -111									
Particulate Matter (mg/Nm3)	4.53	4.56	4.60	4.75	4.90	4.81	4.53	4.90	4.69
SO2 (mg/Nm3)	9.61	8.00	9.61	8.00	9.61	8.00	8.00	9.61	8.81
NOx (mg/Nm3)	76.76	80.60	92.12	80.60	84.44	88.28	76.76	92.12	83.80
Recycled Feed Furnace H -121									
Particulate Matter (mg/Nm3)	4.29	4.82	4.93	4.53	4.60	4.55	4.29	4.93	4.62
SO2 (mg/Nm3)	8.00	6.41	8.00	4.80	8.00	6.41	4.80	8.00	6.94
NOx (mg/Nm3)	65.25	72.92	84.44	76.76	95.95	80.60	65.25	95.95	79.32
Recycled Feed Furnace H -131									
Particulate Matter (mg/Nm3)	4.64	4.20	4.37	4.87	4.99	4.90	4.20	4.99	4.66
SO2 (mg/Nm3)	11.21	9.61	6.41	6.41	11.21	9.61	6.41	11.21	9.08
NOx (mg/Nm3)	92.12	95.95	76.76	88.28	92.12	95.95	76.76	95.95	90.20
GHU H-740									
Particulate Matter (mg/Nm3)	4.71	4.86	4.91	4.92	4.70	4.93	4.70	4.93	4.84
SO2 (mg/Nm3)	8.00	11.21	12.81	11.21	9.61	12.81	8.00	12.81	10.94
NOx (mg/Nm3)	111.31	122.82	130.50	126.66	118.98	126.66	111.31	130.50	122.82
GHU H-710									
Particulate Matter (mg/Nm3)	4.98	4.67	-	4.65	4.58	3.71	3.71	4.98	4.52
SO2 (mg/Nm3)	8.00	9.61	-	9.61	8.00	6.41	6.41	9.61	8.33
NOx (mg/Nm3)	99.79	107.47	-	115.14	103.63	92.12	92.12	115.14	103.63
Aromatics H-301									
Particulate Matter (mg/Nm3)	*	*	*	*	*	*	*	*	*
SO2 (mg/Nm3)	*	*	*	*	*	*	*	*	*
NOx (mg/Nm3)	*	*	*	*	*	*	*	*	*
Remark: The sign " * " Indicates that the particular stack was not in operation that period .									

Stack Emission Data									**Annexure -I**
ETP:	**Apr-23**	**May-23**	**Jun-23**	**Jul-23**	**Aug-23**	**Sep-23**	**Min**	**Max**	**Average**
Hazardous Waste Incinerator									
Particulate Matter mg/Nm3	*	*	*	*	*	*	*	*	*
SO2 in ppm	*	*	*	*	*	*	*	*	*
NOx in ppm	*	*	*	*	*	*	*	*	*
Sludge Dryer									
Particulate Matter mg/Nm3	28.14	9.25	13.50	53.05	53.28	78.51	9.25	78.51	39.29
Remark: The sign " * " Indicates that the particular stack was not in operation that period .									

Stack Emission Data						**Annexure -I**			
MEG-I									
CO2 Stripper Vent	**Apr-23**	**May-23**	**Jun-23**	**Jul-23**	**Aug-23**	**Sep-23**	**Min.**	**Max.**	**Average**
Particulate Matter mg/Nm3	BDL	BDL	5.52	2.23	BDL	3.33	BDL	5.5	3.7
CO in mg/ Nm3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Vent Absober									
HC in mg/ Nm3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
MEG-II									
CO2 Stripper Vent									
Particulate Matter mg/Nm3	BDL	BDL	1.3	1.0	BDL	BDL	BDL	1.3	0.6
CO in mg/ Nm3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Vent Absober									
HC in mg/ Nm3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
MEG-III									
CO2 Stripper Vent									
Particulate Matter mg/Nm3	BDL	BDL	4.6	2.2	BDL	3.9	BDL	4.6	3.6
CO in mg/ Nm3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Vent Absober									
HC in mg/ Nm3	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Remarks : Maximum accuray of GC during the time of analysis; actual values of CO are <11.45 mg/NM3 .									
BDL - Below Detectable Limit									
Detectable limit for PM > 0.01 mg/NM3									
Detectable limit for CO > 11.45 mg/NM3									
Detectable limit for HC > 6.54 mg/NM3									

Stack Emission Data							**Annexure -I**		
PTA Plant -I	**Apr-23**	**May-23**	**Jun-23**	**Jul-23**	**Aug-23**	**Sep-23**	**Min**	**Max**	**Average**
Off gas Expander									
PM (mg/Nm3)	3.41	3.97	5.42	5.06	4.78	4.45	3.41	5.42	4.52
SO2 (mg/Nm3)	3.20	6.41	4.80	6.41	4.80	6.41	3.20	6.41	5.34
NOx (mg/Nm3)	15.63	18.75	21.88	18.75	15.63	17.19	15.63	21.88	17.97
Vent Scrubber Purified Plant									
PM (mg/Nm3)	92.50	86.00	81.50	88.00	85.00	80.00	80.00	92.50	85.50
SO2 (mg/Nm3)	8.00	9.61	11.21	9.61	8.00	6.41	6.41	11.21	8.81
NOx (mg/Nm3)	20.31	21.88	20.31	21.88	20.31	18.75	18.75	21.88	20.57
Atmospheric Absorber									
PM (mg/Nm3)	5.17	5.06	5.94	4.45	4.93	5.05	4.45	5.94	5.10
SO2 (mg/Nm3)	6.41	4.80	6.41	8.00	6.41	4.80	4.80	8.00	6.14
NOx (mg/Nm3)	17.19	12.50	15.63	17.19	14.06	12.50	12.50	17.19	14.85
PTA Plant-II:									
Incinerator Stack									
Particulate Matter mg/Nm3	*	*	*	*	*	*	*	*	*
SO2 in PPM	*	*	*		*	*	*	*	*
NOx in PPM	*	*	*	*	*	*	*	*	*
HCl in mg/NM3	*	*	*	*	*	*	*	*	*
Cl2 in mg/NM3	*	*	*	*	*	*	*	*	*
Off gas Expander									
PM (mg/Nm3)	5.08	5.13	5.06	4.73	3.49	3.88	3.49	5.13	4.56
SO2 (mg/Nm3)	3.20	4.80	6.41	8.00	9.61	8.00	3.20	9.61	6.67
NOx (mg/Nm3)	14.06	10.94	14.06	20.31	21.88	20.31	10.94	21.88	16.93
Vent Scrubber Purified plant									
PM (mg/Nm3)	83.00	68.00	75.00	82.00	83.50	91.00	68.00	91.00	80.42
SO2 (mg/Nm3)	4.80	6.41	8.00	9.61	8.00	6.41	4.80	9.61	7.21
NOx (mg/Nm3)	12.50	15.63	18.75	15.63	20.31	15.63	12.50	20.31	16.41
Atmospheric Absorber									
PM (mg/Nm3)	4.20	4.78	8.04	12.48	6.07	8.28	4.20	12.48	7.31
SO2 (mg/Nm3)	8.00	9.61	6.41	4.80	6.41	4.80	4.80	9.61	6.67
NOx (mg/Nm3)	18.75	20.31	17.19	12.50	17.19	21.88	12.50	21.88	17.97
PTA Plant-III									
Incinerator Stack									
	Apr-23	**May-23**	**Jun-23**	**Jul-23**	**Aug-23**	**Sep-23**	**Min**	**Max**	**Average**
Particulate Matter mg/Nm3	*	*	*	*	*	*	*	*	*
SO2 in PPM	*	*	*	*	*	*	*	*	*
NOx in PPM	*	*	*	*	*	*	*	*	*
HCl in mg/NM3	*	*	*	*	*	*	*	*	*
Cl2 in mg/NM3	*	*	*	*	*	*	*	*	*
Off gas Expander									
PM (mg/Nm3)	4.57	4.17	4.37	4.16	4.44	4.87	4.16	4.87	4.43
SO2 (mg/Nm3)	8.00	9.61	8.00	9.61	8.00	6.41	6.41	9.61	8.27
NOx (mg/Nm3)	15.63	20.31	18.75	21.88	18.75	14.06	14.06	21.88	18.23

Vent Scrubber Purified Plant									
PM (mg/Nm3)	23.90	61.88	37.05	20.36	26.87	23.93	20.36	61.88	32.33
SO2 (mg/Nm3)	4.80	6.41	4.80	12.81	11.21	9.61	4.80	12.81	8.27
NOx (mg/Nm3)	14.06	17.19	14.06	12.50	15.63	10.94	10.94	17.19	14.06
Atmospheric Absorber									
PM (mg/Nm3)	4.71	4.54	4.62	4.58	5.35	4.69	4.54	5.35	4.75
SO2 (mg/Nm3)	6.41	8.00	6.41	4.80	6.41	8.00	4.80	8.00	6.67
NOx (mg/Nm3)	18.75	21.88	20.31	17.19	12.50	9.38	9.38	21.88	16.67
Remark: The sign " * " Indicates that the particular stack was not in operation that period .									

Stack Emission Data								Annexure -I	
SBR Plant :	**Apr-23**	**May-23**	**Jun-23**	**Jul-23**	**Aug-23**	**Sep-23**	**Min**	**Max**	**Avg**
SBR Finishing Dry Area (X-1601)									
Styrene (mg/Nm3)	8.3	7.5	9.0	9.5	8.5	9.3	7.5	9.5	8.7
SBR Finishing Dry Area (X-2601)									
Styrene (mg/Nm3)	9.0	8.0	8.3	9.0	8.1	9.0	8.0	9.0	8.6
SBR Finishing Dry Area (X-3601)									
Styrene (mg/Nm3)	9.4	8.8	7.6	8.8	9.2	8.8	7.6	9.4	8.7
SBR Finishing Dry Area (X-4601)									
Styrene (mg/Nm3)	7.3	7.2	8.7	9.2	8.9	9.7	7.2	9.7	8.5
SBR FinishingWet Area (X-1610A)									
Styrene (mg/Nm3)	9.1	8.6	9.1	11.5	10.3	10.1	8.6	11.5	9.8
SBR FinishingWet Area (X-1610B)									
Styrene (mg/Nm3)	10.0	9.5	10.5	10.9	11.6	11.0	9.5	11.6	10.6
Remark: The sign " * " Indicates that the particular stack was not in operation that period .									

Stack Emission Data								**Annexure -I**	
PBR Plant	**Apr-23**	**May-23**	**Jun-23**	**Jul-23**	**Aug-23**	**Sep-23**	**Min**	**Max**	**Average**
Particulate Matter (mg/Nm3)	5.29	4.65	5.05	5.03	3.45	3.90	3.45	5.29	4.56
SO2 in PPM	2.45	1.84	2.45	1.84	1.22	1.22	1.22	2.45	1.84
NOx in PPM	16.32	12.24	18.36	16.32	18.36	16.32	12.24	18.36	16.32

Remark:The sign " * " Indicates that the particular stack was not in operation that period .

Stack Emission Data								Annexure -I	
CCPP	**Apr-23**	**May-23**	**Jun-23**	**Jul-23**	**Aug-23**	**Sep-23**	**Min**	**Max**	**Average**
Boiler - I									
Particulate Matter (mg/Nm3)	7.49	5.23	8.23	1.83	4.72	6.03	1.8	8.2	5.6
SO2 (mg/Nm3)	64.06	120.11	216.2	320.3	136.13	224.21	64.1	320.3	180.2
NOx(mg/Nm3)	172.72	168.88	199.58	222.61	172.72	195.75	168.9	222.6	188.7
Hg(mg/Nm3)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Boiler - II									
Particulate Matter (mg/Nm3)	4.24	6.04	6.61	1.06	9.81	4.14	1.1	9.8	5.3
SO2 (mg/Nm3)	96.09	216.2	136.13	256.24	176.17	200.19	96.1	256.2	180.2
NOx(mg/Nm3)	211.1	191.91	176.55	161.2	203.42	184.23	161.2	211.1	188.1
Hg(mg/Nm3)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Boiler - III									
Particulate Matter (mg/Nm3)	8.31	5.61	8.92	0.92	3.39	5.51	0.9	8.9	5.4
SO2 (mg/Nm3)	104.1	376.35	280.26	216.2	48.05	264.25	48.1	376.4	214.9
NOx(mg/Nm3)	241.8	218.77	230.29	180.39	153.53	211.1	153.5	241.8	206.0
Hg(mg/Nm3)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Boiler - IV									
Particulate Matter (mg/Nm3)	4.17	6.19	10.34	1.66	10.31	9	1.7	10.3	6.9
SO2 (mg/Nm3)	80.08	104.1	112.1	376.35	192.18	144.14	80.1	376.4	168.2
NOx(mg/Nm3)	199.58	184.23	161.2	257.16	214.94	153.53	153.5	257.2	195.1
Hg(mg/Nm3)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
Boiler - V									
Particulate Matter (mg/Nm3)	6.3	5.25	9.21	1.71	7.19	4.83	1.7	9.2	5.7
SO2 (mg/Nm3)	56.05	320.3	256.24	392.37	296.28	544.51	56.1	544.5	311.0
NOx(mg/Nm3)	161.2	145.85	211.1	230.29	237.96	249.48	145.9	249.5	206.0
Hg(mg/Nm3)	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

Remark: The sign " * " Indicates that the particular stack was not in operation that period .

BDL - Below Detectable Limit Detectable limit for Hg > 0.005 mg/NM3

Annexure II

AMBIENT AIR QUALITY MONITORING RESULTS

April '2022 to Sep'2023

LOCATION	DISTANCE FROM RIL	DIRECTION WRT RIL	MINIMUM VALUE	PERCENTILE					MAX. VALUE	AVG. VALUE
				10	25	50	75	95		
POLLUTANT -		**PM-10**		**Unit-Microgram/m3**						
RIL SITE										
*PP Plant			44.0	50.00	53.00	60.50	69.25	73.00	75.00	61.19
*RAW WATER POND			38.0	45.10	51.00	57.00	62.25	65.45	68.00	56.06
HAZIRA	6	SW	45.0	50.10	55.50	62.50	72.00	75.45	78.00	62.63
BHATLAI	5	NNW	38.0	46.00	52.50	60.00	71.00	73.50	76.00	60.63
ICHHAPORE	6	ENE	42.0	45.00	49.00	55.00	63.00	65.40	68.00	55.21
DUMAS	6	SSE	38.0	45.10	50.00	57.00	66.00	70.00	72.00	57.60
LOCATION	**DISTANCE**	**DIRECTION**	**MINIMUM VALUE**	**PERCENTILE**						
				10	**25**	**50**	**75**	**95**	**MAX. VALUE**	**AVG. VALUE**
POLLUTANT -		**PM2.5**								
RIL SITE				**Unit-Microgram/m3**						
*PP Plant			12.48	15.0	16.2	19.5	24.5	26.6	27.5	20.3
*RAW WATER POND			9.56	12.5	14.6	17.1	21.6	23.9	25.4	17.6
HAZIRA	6	SW	13.63	15.6	17.6	21.3	25.3	27.1	28.2	21.3
BHATLAI	5	NNW	9.48	12.5	14.8	19.1	24.3	26.4	27.7	19.5
ICHHAPORE	6	ENE	9.50	11.4	13.0	16.1	20.8	23.5	24.4	16.8
DUMAS	6	SSE	8.76	11.8	13.3	17.0	23.6	25.8	27.1	18.3
POLLUTANT - SO2										
LOCATION	**DISTANCE FROM RIL**	**DIRECTION WRT RIL**	**MINIMUM VALUE**	**10**	**25**	**50**	**75**	**95**	**MAX. VALUE**	**AVG. VALUE**
RIL SITE				**Unit-microgram/m3**						
*PP Plant			16.41	18.7	20.5	22.3	24.4	27.6	28.1	22.4
*RAW WATER POND			11.78	13.5	15.6	19.4	21.7	23.9	24.6	18.8
HAZIRA	6	SW	16.37	18.7	20.5	22.3	23.6	25.1	26.8	22.0
BHATLAI	5	NNW	11.79	15.6	18.4	22.4	24.0	26.7	27.7	21.3

ICHHAPORE	**6**	ENE	11.76	12.9	15.3	17.2	20.1	21.5	24.3	17.4
DUMAS	**6**	SSE	11.71	13.4	15.4	19.4	22.6	25.1	26.6	19.2
LOCATION	**DISTANCE FROM RIL**	**DIRECTION WRT RIL**	**MINIMUM VALUE**	**PERCENTILE**						
				10	**25**	**50**	**75**	**95**	**MAX. VALUE**	**AVG. VALUE**
POLLUTANT - NO2				**Unit-microgram/m3**						
RIL SITE										
*PP Plant			21.17	23.4	25.2	27.3	32.4	34.2	35.4	28.4
*RAW WATER POND			17.35	19.5	22.2	26.3	28.4	30.7	31.3	25.2
HAZIRA	6	SW	23.15	25.1	26.4	28.7	31.9	34.7	36.2	29.2
BHATLAI	5	NNW	16.29	20.7	23.8	29.4	32.5	34.4	34.8	28.0
ICHHAPORE	6	ENE	16.23	18.4	21.1	24.3	26.6	28.4	30.3	23.7
DUMAS	6	SSE	18.22	21.4	23.5	26.0	28.0	30.4	32.2	25.7

Annexure II

AMBIENT AIR QUALITY MONITORING RESULTS

April'2023 to Sep'2023

LOCATION	DISTANCE FROM RIL	DIRECTION WRT RIL	MINI VALUE	PERCENTILE					MAX. VALUE	AVG. VALUE
Pollutant -Benzene				10	25	50	75	95		
RIL SITE										**Unit-microgram/m3**
*PP Plant			3.19	3.51	3.83	4.15	4.47	4.79	4.79	4.02
*RAW WATER POND			2.55	3.19	3.19	3.51	3.83	4.15	4.15	3.58
HAZIRA	6	SW	3.19	3.19	3.51	3.83	4.15	4.47	4.47	3.80
ICHHAPORE	5	NNW	2.55	3.19	3.19	3.51	3.83	3.99	4.15	3.47
DUMAS	6	ENE	2.55	3.19	3.19	3.51	3.91	4.47	4.47	3.65
BHATLAI	6	SSE	3.19	3.19	3.51	3.83	3.83	4.47	4.47	3.75

Annexure II

AMBIENT AIR QUALITY MONITORING RESULTS

April'2023 to Sep'2023

LOCATION	DISTANCE FROM RIL	DIRECTION WRT RIL	MINIMUM VALUE	PERCENTILE					MAX. VALUE	AVG. VALUE
				10	25	50	75	95		
POLLUTANT - Non Methane HC				**Unit-microgram/m3**						
RIL SITE			**Min**						**Max.**	**Avg.**
*PP Plant			BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
*RAW WATER POND			BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
HAZIRA	6	SW	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
BHATLAI	5	NNW	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
ICHHAPORE	6	ENE	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL
DUMAS	6	SSE	BDL	BDL	BDL	BDL	BDL	BDL	BDL	BDL

BDL - Below Detectable Limit

Detectable limit for Non Methane HC >61 microgram/m3

Annexure -II

Continuous Ambient Air Quality Monitoring Station

Location : Central lab ,RIL Hazira

April-23 to Sep-23

Apr-23

PM2.5(µg/m3)	PM10(µg/m3)	SO2(µg/m3)	NO2(µg/m3)
35.08	67.87	11.61	49.02

May-23

PM2.5(µg/m3)	PM10(µg/m3)	SO2(µg/m3)	NO2(µg/m3)
24.65	49.9	22.52	25.06

Jun-23

PM2.5(µg/m3)	PM10(µg/m3)	SO2(µg/m3)	NO2(µg/m3)
21.71	**59.62**	**10.09**	**21.08**

Jul-23

PM2.5(µg/m3)	PM10(µg/m3)	SO2(µg/m3)	NO2(µg/m3)
12.67	**54.95**	**10.4**	**20.94**

Aug-23

PM2.5(µg/m3)	PM10(µg/m3)	SO2(µg/m3)	NO2(µg/m3)
12.68	**60.5**	**10.06**	**18.42**

Sep-23

PM2.5(µg/m3)	PM10(µg/m3)	SO2(µg/m3)	NO2(µg/m3)
14.96	47.55	10.86	15.39

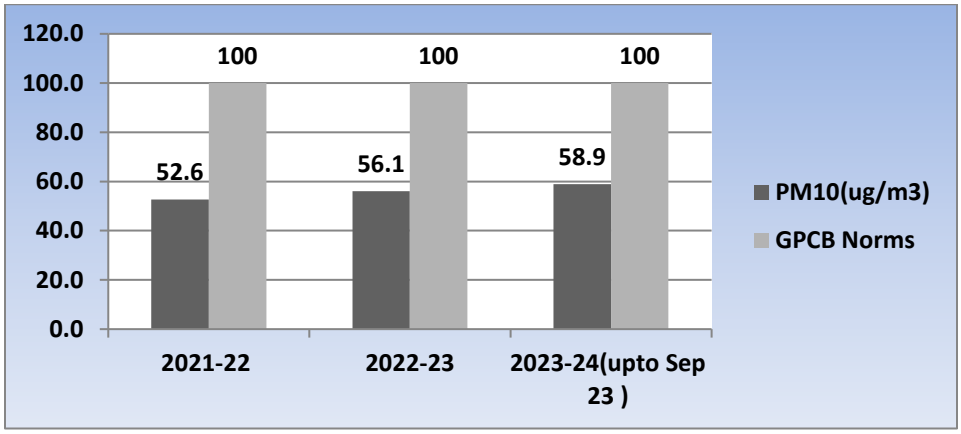
Annexure-III

Treated Effluent Analysis from April-23~ Sep -23

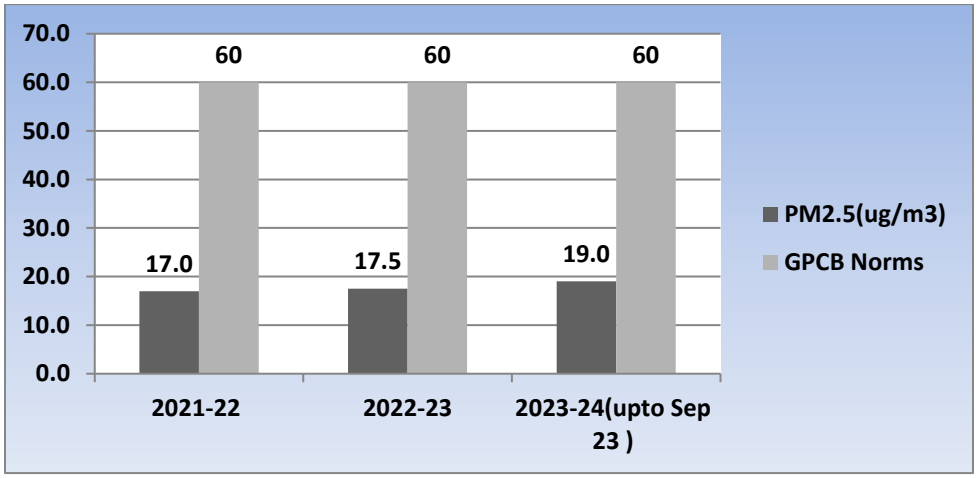
Sr. No.	Parameters	Permissible limits granted by GPCB	Unit	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23
				Values					
1	Colour	100	Pt-Co Scale in units	25	20	20	20	20	25
2	pH	6.5 to 8.5	oC	7.68	7.63	7.5	7.15	7.41	7.23
3	Total Suspended Solids	100	mg/liter	17	14	16	19	17	16
4	Oil and Grease	10	mg/liter	<2	<2	<2	<2	<2	<2
5	Phenolic Compounds	1	mg/liter	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005	<0.0005
6	Hexavalent Chromium	0.1	mg/liter	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
7	Total Chromium	2	mg/liter	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
8	Copper	2	mg/liter	<0.02	<0.02	<0.02	<0.02	<0.04	<0.04
9	Zinc	5	mg/liter	0.19	0.23	0.31	0.104	0.14	0.13
10	Nickel	3	mg/liter	0.061	0.073	0.091	0.063	0.072	0.071
11	Lead	0.1	mg/liter	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
12	Mercury	0.01	mg/liter	<0.0006	<0.0006	<0.0006	<0.0006	<0.001	<0.001
13	Cyanides	0.2	mg/liter	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
14	Flourides	1.5	mg/liter	1.06	1.12	1.02	0.92	0.62	0.76
15	COD	250	mg/liter	82	79	86	78	84	84
16	BOD (3 days 27^{o}C)	50	mg/liter	21	21	21	19	23	22.6
17	Sulphides	2	mg/liter	<0.1	<0.1	<0.01	<0.1	<0.1	<0.01
18	Ammonical Nitrogen	50	mg/liter	5.13	4.7	3.76	4.28	3.09	3.82
19	Temperatur e	40	--	31.2	31.4	31.4	29.3	30.1	30.6
20	Bio-assay Test	90% survival of fish after 96 hour	% survival	100%	100%	100%	100%	100%	100%

Annexure IV

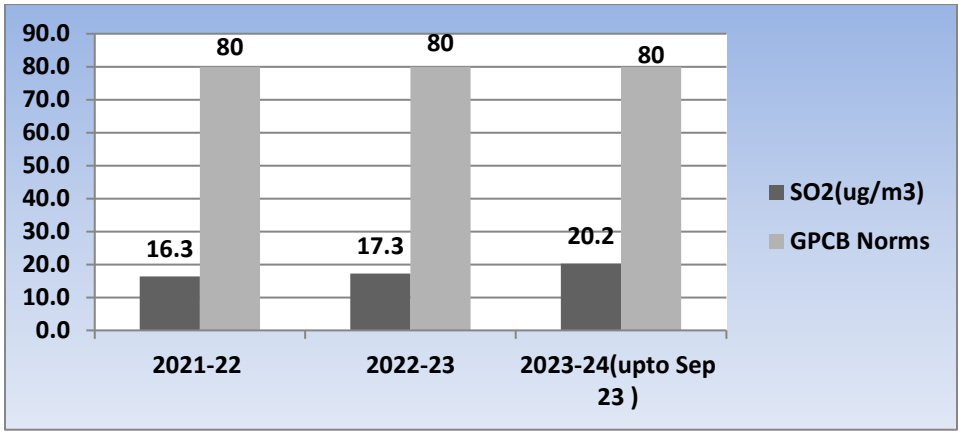
Trend of PM10 (ug/m3)



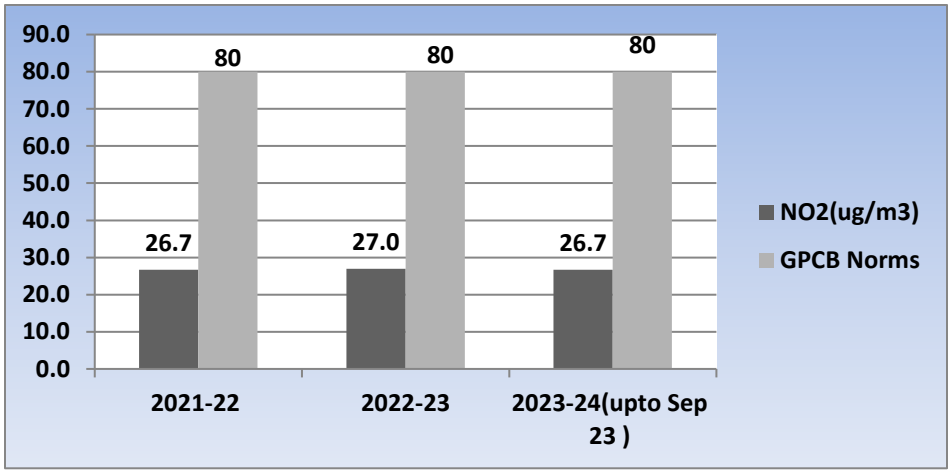
Trend of PM2.5 (ug/m3)



Trend of SO2 (ug/m3)



Trend of NO2((ug/m3)



Annexure-V

Condition wise Compliance of CCA & Its Amendment issued to M/s Reliance Industries Limited, Hazira Manufacturing Division as on 30.09.2023

Condition No.	Conditions of the CCA (AWH-108333 date of issue 09.06.2020)	Compliance Status
1	Consent Order No: **AWH-108333** Date of issue: **09/06/2020**	Noted
2	The consents shall be valid up to **31/03/2027** for the use of outlet for the discharge of treated effluent & emission due to operation of industrial plant for manufacturing of the following items/products.	Noted for CCA validity up to 31/03/2027. This CCA is for entire HMD complex. All products and byproducts are covered. Coal jetty is yet to be commissioned.
	Subject to Specific Conditions:	
1	Unit shall strictly follow conditions stipulated in EC issued by MOEF vide letter NO: F. No. J.11011/32/2005-IA-II-(I) dated: 30th June 2005, J.II011/40/2015-IA-II(I) dated: 10th July 2017.	All the conditions of ECs are complied with. Compliance status of all the conditions of these ECs are submitted to MOEF once in six month.
2	Industry shall manage Solid Wastes generated from industrial activities as per Solid wastes Management Rules -2016 (Solid wastes as defined in Rule -3(46)).	Solid wastes is being disposed off as per solid wastes Management Rules 2016.
3	As per Provision of Rule 18 of Solid wastes Management Rules 2016 you are directed to make an arrangement in utilities to Replace at least five percent (5%) of your solid fuel requirement by 'Refused Derived fuel'	Noted. As soon as RDF is available from Surat Municipal Corporation (SMC), the same will be used in our CCPP.
4	Industry Shall obtain NOC from CGWA as per order of Hon. National Green Tribunal for the withdrawal of ground water.	Noted. However this condition is not applicable as no ground water is being used in our complex.
5	Unit Shall Comply with Solid fuel Guidelines as well as Coal handling guidelines of the Board .	Complied. Solid fuel as well as Coal handling guidelines are complied with.
6	Unit Shall comply with Plastic wastes Management Rules 2016	Complied and obtained necessary registration under Plastic Waste Management Rules, 2016.
7	Unit Shall provide adequate air pollution control system to control SO2 gas emission generated from coal based/solid fuel based boiler .	Complied Adequate APC installed, and emission found well within norms
3	**CONDITION UNDER THE WATER ACT:**	
3.1	Source of water from River Tapi-Singanpore weir/Variav well .	Noted and agreed. Water is being withdrawn from River Tapi-Singanpore weir/Variav well
3.2	The quantity of the water consumption for industrial purpose shall not exceed 1,64,200 KLD	Complied. The water Consumption quantity for industrial purposes is lower than the specified norms mentioned in this condition
3.3	The quantity of the water consumption for domestic purpose shall not exceed 912 KLD .	Complied. The water consumption for domestic purpose is lower than the specified norms mentioned in this condition.
3.4	The quantity of the industrial effluent to be generated from the manufacturing process and other ancillary industrial operation shall not exceed 61,287 KLD.	Complied. The treated effluent discharge quantity is lower than the specified norms mentioned in this condition.

3.5	Industrial effluent after necessary treatment shall be reused up to maximum extent & remaining shall be sent to captive ETP for further treatment.	Complied. Low TDS effluent after treatment at ETP is being reused and remaining effluent is being treated in the ETP and discharged to Tapi Estuary.
3.6	Industry shall provide fixed pipeline with flow meter for the reuse of effluent and maintain its records. For the treatment of the effluent that will be generated from various unit, following methodology shall be adopted	Complied. Fixed pipeline with flow meter is provided for the reuse of effluent and records are maintained.
3.7	For the treatment of the effluent that will be generated from various unit, following methodology shall be adopted	
i)	**Effluent shall be segregated into high TDS and low TDS effluent streams**	
a)	Low TDS effluent will be treated in the ETP comprising primary, secondary and tertiary treatment facility. Treated effluent will be reused for cooling tower make up .	LTDS effluent treatment system has been comprised of primary, secondary and tertiary treatment facility. Low TDS bearing treated effluent is being reused for cooling tower make up and DM water Generation.
b)	High TDS effluent stream will be segregated on the basis of oil content stream and non-oil content effluent stream . Effluent will be treated in the ETP comprising primary and secondary treatment facility. Treated effluent will be discharge through the existing diffuser into Tapi estuary.	High TDS effluent stream has been segregated on the basis of oil content (Oily and Non-Oily effluent stream). Treated High TDS effluent is being discharged through existing pipeline and diffuser system into Tapi estuary.
	TRADE EFFLUENT:	
3.8	The quality of industrial effluent shall conform to the following standards: (whichever is applicable)	Complied. Treated effluent quality is well within prescribed norms.
3.9	The Industrial effluent conforming to the above standards can be utilized for fire water make up /Horticulture / dust suppression / cooling water make up / DM water production. Reject water from RO plant & the cooling tower blow-down shall be discharged in estuary zone of River Tapi along with treated effluent through an existing treated effluent discharge line with diffuser at the end. Not exceeding 61,287KLD.	Low TDS bearing effluent after treatment is being reuse as cooling water make up as well as for DM water generation. Balance Final treated effluent conforming to standards is discharged into estuary zone of River Tapi and is well below the permitted norms. Monthly monitoring reports are regularly submitted to GPCB
3.10	The quantity of the domestic wastes water (Sewage) shall not exceed 736 KLD.	Complied. Domestic sewage is being treated along with Industrial effluent. The total quantity of treated sewage effluent is lower than specified limit.
3.11	The Domestic effluent from the complex shall be treated in the Biological Section of the ETP Or shall be used in horticulture after conforming to following norms: - BOD (3 days at 27 ^{0}C) less than 20 mg/l Suspended Solids less than 30 mg/l Residual Chlorine Minimum 0.5 mg/l	Complied. Domestic sewage is treated in biological section of ETP.
4	**CONDITIONS UNDER THE AIR ACT:**	

4.1	The following shall be used as fuel .	Fuel consumption in boilers/heaters/furnaces/Vaporizers of all plants respectively as mentioned in table are well within specified norms.
4.2	The applicant shall install & operate comprehensive adequate air pollution control system in order to achieve Prescribed norms.	Complied. Adequate air pollution control facilities are in place. All APCs are in operation continuously.
4.3	The flue gas emission through stack attached to Steam boilers /furnaces/heaters/vaporizers/incinerators shall conform to the standards mentioned below :	Flue gas samples are collected through stack attached to boilers/ furnace/ heaters / vaporizers and incinerators. All parameters are well within the specified norms. Monitoring reports are regularly being submitted to GPCB regularly.
	D.G. Set Conditions :	
	Th D.G Set shall have acoustic enclosure and shall comply with the standards specified at Sr. No. 95 of Schedule 1 of the Rule -3 of E.P.Rules -1986 and noise pollution level as per the Air act -1981 .	Complied. DG sets are operated during emergency only and noise level is lower than the specified norms as per the Air Act.
	D.G. Sets Standards :	
	The Flue gas emission through stack attached to D.G. sets shall conform to the following standards:	
a)	The minimum height of stack to be provided with each of the generator set shall be H=h+0.2(KVA)1/2 ,where H=total Stack height in meter, h=Height of the building in meters ,where or by the side of which the generator set is installed	Flue gas emission monitoring are being done on regular basis and results found well within norms .
b)	Noise from DG set shall be controlled by providing an acoustic enclosure or by treating the room acoustically at the users end .	Complied. D.G. sets are installed in the complex as per recommendations of the D.G. Set manufactures.
c)	The acoustic enclosure or acoustic treatment of the room shall be designed for minimum 25db(A) insertions loss or for meeting the ambient noise standards, whichever is on the higher side . If the actual ambient noise is on the higher side ,it may not be possible to check the performance of the acoustic enclosures acoustic treatment .Under such circumstances the performance may be checked for noise reduction up to actual ambient noise level preferably in the night time . The measurement for insertion loss may be done at different points at 0.5 meter from the acoustic enclosure room and the averaged.	Noted . Operation of DG. Sets is not a regular activity.
d)	The D.G. Set shall be provided with proper exhaust muffler with insertion loss of minimum 25 dB(A)	Complied. D.G. sets are operated during emergency only.
e)	All efforts shall be made to bring down the noise level due to the D.G. set outside the premises within the ambient noise requirement by proper sitting and control measures.	Complied. All D.G. sets are installed within plant premises. Ambient noise level found well within norms at periphery of the complex.

f)	Installation of a D.G. sets must be strictly in compliance with the recommendations of the D.G.Set manufactures .	Complied. D.G. sets are installed in the complex as per recommendations of the D.G.Set manufactures.
g)	A proper routine and preventive manitaince procedure for the D.G. sets should be set and followed in consultation with the D.G. set manufacturer which would help prevent noise levels of the D.G.set from deteriorating with use	Complied. A proper routine and preventive maintenance procedure for the D.G. sets is in place and routine and preventive maintenance done on regular basis to prevent noise levels of the D.G.set from deteriorating with use
4.4	The process emission through the various stacks / vents of reactors / process and vessels attached shall conform to the following standards	All Process stacks samples are collected regularly. All parameters are found well within norms. Monitoring reports are regularly being submitted to GPCB .
4.5	Industry shall take adequate measures to control dusting, due to storage, transportation & handling of coal/lignite & fly ash.	Complied. Adequate measures are provided to control dusting due to storage, transportation & handling of coal & fly ash.
4.6	Industry shall comply with coal handling guidelines of the board.	Complied
4.7	Industry shall comply with fly ash notification 1999 as amended from time to time	Complied.
4.8	The concentration of the following parameters in the ambient air within the premises of the industry and a distance of 10 meters from the source other than the stack/vent shall not exceed the following levels.	Ambient air quality within the complex remains well with in the norms. Monthly monitoring reports are being submitted to GPCB regularly.
4.9	The applicant shall provide portholes, ladder, platform etc. at chimney(s) for monitoring the air emission and the same shall be open for inspection to/and for use of Board's staff. The chimney(s) vents attached to various sources of emission shall be designed by numbers such as S-1, S-2, etc. and these shall be painted /displayed to facilitate identification.	Complied. Sampling porthole, ladder, platform etc. in all stacks are provided as per the condition mentioned.
4.10	The industry shall take adequate measures for control of noise levels from its own sources within the premises so as to maintain ambient air quality standards in respect of noise to less than 75dB(A) during daytime and 70 dB(A) during nighttime. Day time is reckoned in between 6 a.m. and 10 p.m. and nighttime is reckoned between 10 p.m. and 6 a.m.	Complied. Noise level monitoring is done regularly and noise level in the periphery of the complex found within limit.
5	**AUTHORISATION as per HAZARDOUS AND OTHER WASTES (MANAGEMENT & TRANSBOUNDARY), RULES 2016, Form 2 (See rule 6(2) Form for grant of authorization for occupier or operator handling Hazardous wastes .**	
5.1	Authorizations order no. : **AWH-108333** Date of iss **09/06/2020**	Noted. Authorization no. AWH-108333, valid up to 31.03.2027.

5.2	M/s. RELIANCE INDUSTRIES LTD. is hereby granted an authorization to operate facility for following hazardous wastes on the premises situated at VILL.MORA, P.O. -BHATHA, SURAT-HAZIRA ROAD, Tah. Chorasi ,Dist .SURAT - 394510.	Details of hazardous wastes is being submitted to the board through Environment Audit Reports, Form-IV, and Environmental Statement.
5.3	The authorization shall be valid up to. **31/03/2027**	Noted. Authorization no. AWH-108333, date of issue 09.06.2020. Valid up to 31.03.2027
5.4	The Authorization is subject to the conditions stated below and such other conditions as may be specified in the rules from time to time under the Environment (Protection) Act-1986.	Noted
5.5	The authorization is granted to operate a facility for collection, storage within factory premises transportation and ultimate disposal of Hazardous wastes as per Condition no. 6.2 to the industry having valid CCA of this board	Hazardous waste storage facility is having proper shed and leachate Collection system. For TSDF, RIL is having permanent membership with BEIL, Ankleshwar/ Dahej. Also wastes are regularly being sent to M/s Ambuja cement for co processing purpose as well.
6.	**TERMS AND CONDITIONS OF AUTHORIZATION:**	
1.	The applicant shall comply with the provisions of the Environment (Protection) Act - 1986 and the rules made there under.	Complied with the provisions of the Environment (Protection) Act - 1986 and the rules made there under.
2.	The authorization or its renewal shall be produced for inspection at the request of an officer authorized by the Gujarat Pollution Control Board .	Noted.
3.	The persons authorized shall not rent, lend, sell, and transfer or otherwise transport the hazardous wastes without obtaining prior permission of the Gujarat Pollution Control Board	Complied
4.	Any unauthorized change in personnel, equipment or working conditions as mentioned in the authorization order by the persons authorized shall constitute a breach of this authorization.	Noted and complied
5.	The person authorized shall implement Emergency Response Procedure (ERP) for which this authorization is being granted considering all site specific possible scenarios such as spillage ,leakages ,fire etc and their possible impact and also carry out mock drill in this regard at regular interval of time .	Complied. Emergency Response Procedure (ERP) is well implemented at site and all possible scenarios are identified and mock drill are carrying out regularly
6.	The person authorized shall comply with the provisions outlined in the Central Pollution Control Board guidelines on “Implementing Liabilities for Environmental Damages due to Handling and Disposal of Hazardous wastes and Penalty” .	Complied. PLI Policy is available. (Policy No. 4007/154722754/05/000 Valid till 30.06.2024)
7.	It is the duty of the authorized person to take Prior permission of the Gujarat Pollution Control Board to close down the facility.	Noted
8.	An application for the renewal of an authorization shall be made as laid down in rules 6(2) under Hazardous and other waste Rules 2016	Noted

9.	The imported Hazardous and Other wastes shall be fully insured for transit as well as for any accidental occurrence and its clean-up operation	Noted
10.	The record of consumption and fate of the imported hazardous and other wastes shall be maintained.	Noted and records maintained.
11.	The hazardous and other wastes which gets generated during recycling or reuse or recovery or pre- processing or utilization of imported hazardous or other wastes shall be treated and disposed of as per specific conditions of authorization.	Noted and waste disposal done as prescribed in authorization
12.	The importer or exporter shall bear the cost of import or export and mitigation of damages, if any.	Noted.
13.	An application for the renewal of an authorization shall be made as laid down in Rules 6(2) under Hazardous wastes and other wastes Rule 2016.	Noted and renewal application made as per hazardous wastes rule 2016
14	Any Other conditions for compliance as per the guidelines issued by the Ministry of Environment Forest and Climate change or Central Pollution Control Board from time to time.	Noted and complying as and when guidelines issued by the Ministry of Environment Forest and Climate change or Central Pollution Control Board from time to time.
15.	The wastes generator, shall be totally responsible for (i.e. Collection, storage Transportation, and Ultimate disposal) the wastes generated	Noted.
16.	Records of wastes generation, its management and annual return shall be submitted to Gujarat Pollution Control Board in Form 4 by 30th day of June of every year for the preceding period April to March .	Complied. Form 4 submitted to GPCB Gandhinagar every year before 30th June.
17.	In case of any accident details of the same shall be submitted in Form 11 to Gujarat Pollution Control Board .	Noted
18.	As per “Public Liability Insurance Act 91 “company shall get insurance policy ,If applicable	Complied. PLI policy is available (Policy No. 4007/154722754/05/000 Valid till 30.06.2024)
19.	Empty drums and containers of toxic and hazard material shall be treated as per guidelines published for Management & Handling of Discarded containers “ Record of the same shall be maintained and forward to Gujarat Pollution Control Board regularly .	Complied. Empty drums and containers of toxic and hazard material are decontaminated and sold to approved recyclers/reprocessor and records submitted to GPCB on regular basis .
20.	In case of transport of hazardous wastes to a facility for (i.e Treatment, storage and disposal)existing in a state other than the state where hazardous wastes are generated , the occupier shall obtain ‘No Objection Certificate’ from the pollution control	Noted.

	Board or committee of the Concerned State of Union territory administration where the facility exists	
21.	Unit shall take all concrete measures to show tangible results in wastes generation, reduction, avoidance, reuse and recycle. Actions taken in this regard shall be submitted within 3 months and also along with Form 4.	Complied. All environmental measures taken are being regularly submitted along with Form IV ,V & EAR.
22`.	Industry shall have to display the relevant information with regard to hazardous waste as indicated in the Hon. Supreme Court's order in W.P. No.657 of 1995 dated 14th October 2003 .	Relevant information is being displayed through on-line display board installed at outside Gate-4.
23.	Industry shall have to display on-line data outside the main factory gate with regard to quantity and nature of hazardous chemicals being handled in the plant, including wastewater and air emissions and solid hazardous wastes generated within the factory premises.	Relevant information is being displayed through on-line display board installed at outside Gate-4.
7.	**SPECIFIC CONDITIONS:**	
7.1	The authorized actual users of hazardous wastes and other wastes shall maintain records of hazardous wastes purchased in a passbook issues by the state pollution control board along with the authorization.	Noted and the same is being checked from our side as and when waste is sold.
7.2	Handling over of the hazardous and other wastes to the authorized actual users shall be only after making the entry in the passbook of the actual users.	Noted and being complied
7.3	In case of renewal of authorization, a self-certified compliance report in respect of effluent, emission standards and the conditions specified in the authorization for hazardous wand other wastes shall be submitted to SPCB	Complied.
7.4	The occupier of the facility shall comply standards operating procedures/ guidelines published by MoEF&CC or CPCB or GPCB from time to time	Complying the standards operating procedures/ guidelines published by MoEF&CC or CPCB or GPCB from time to time
7.5	Unit shall comply provision of E wastes Management Rules 2016 .	Complying all requirements of E wastes Management Rules 2016 .
7.6	The disposal of hazardous wastes shall be carried out as per the waste management hierarchy.	Complied. Hazardous wastes disposal is being done as per the waste management hierarchy.
7.7	"As per industry request for extension of storage period for hazardous waste up to 180 days for coke (VCM plant), Coke (Cracker plant), spent catalyst, Incinerator Ash, Incinerator Ash from HW incinerator, Tio2 slurry Spent Ni-Cd batteries, Mercury Bearing wastes , Degraded dowotherm/Santotherm , Zink oxide, Chemical	Complied. Hazardous wastes storage & disposal is being done as per the Hazardous and other wastes Management Rules 2016 and disposal is being done as per mentioned condition .

	sludge from wastewater treatment as their generation is not regular, lesser quantity or dependent on shutdown of the plants, industry is directed to dispose the wastes with condition that as and when truck load is accumulated. They may dispose the wastes as per Provisions of Hazardous Wastes Rules 2016 with manifest etc . "	
7.8	The occupier shall maintain the records of generation, sale, storage, transport, recycling processing and disposal of hazardous wastes and make available during the inspection.	Complied. Wastes generation and disposal records are being maintained.
7.9	The transportation of the hazardous waste shall be carried out in GPS mounted dedicated vehicles	Ensure compliance with the transporters arranged by seller. Hazardous wastes are being transported through GPS mounted dedicated vehicles.
8.	**General Conditions:**	
8.1	Any change in personnel, equipment or working conditions as mentioned in the consent form/order should immediately be intimated to this Board.	Noted
8.2	Applicant shall also comply with the general conditions given in Annexure 1.	Complied.
8.3	Whenever due to accident or other unforeseen act or ever, such permission occur or is apprehended to occur in excess of standards laid down such information shall be forthwith reported to board, concerned police station. Office of directorate of Health service department of explosive inspectorate of factories and local body.	Noted
8.4	In case of failure of Pollution control equipment, the production process confined to it shall be stopped. Remedial actions measure shall be implemented immediately to bring entire situation normal.	Noted
8.5	The Environmental Management Unit Cell shall be set up to ensure implementation on and monitoring of environmental safeguards and other conditions stipulated by statutory authorities. The Environmental Management Cell /Unit shall directly report to chief Executive of the organization and shall work as a focal point for internalizing environmental issues. These cells/units also coordinate the exercise of environmental audit and preparation of environmental statements.	A separate Environment Cell, headed by Environment Head with environment qualification and more than 20 years of experience has been established to look after environment management activities . The cell is supported by qualified Environment professionals (Env. Engg). Environment Head report to Site President of HMD complex. Environment cell is coordinating for environmental audit and preparing of environmental statements and other statutory submissions .
8.6	The Environmental audit shall be carried out yearly and the environmental statements pertaining to the previous year shall be submitting to this state board latest by 30th September every year .	Complied. Environmental monitoring is being done by GPCB appointed third party Environment Auditor – M/s N G Patel Polytechnic FYR 2023-24 .Environmental audit report is being submitted to GPCB before 30th June every year. Environment statement is being submitted yearly before 30th Sep.

Reliance
Industries Limited
CIN # L17110MH1973PLC019786

Ref. No: RIL/HMD/HO/GPCB/2023-24/07

September 22, 2023

Member Secretary,
Gujarat Pollution Control Board,
Paryavaran Bhavan,
Sector – 10 A
Gandhinagar-382010

Subject : Submission of Environmental Statement for FY22- 23 for Reliance Industries Ltd at Hazira, Surat (RIL XGN ID: 21170)

Dear Sir,

Please find attached herewith the Environment Statement (Form-V) for the financial year ending on 31st March 2023 as per The Environment (Protection) Act 1986.

Thanking you,

Yours faithfully,
for Reliance Industries Limited

Premal Shah
Head -Environment

Encl.: A/a

Hazira Manufacturing Division
Village-Mora, Post-Bhatha, Surat-Hazira Road, Dist. Surat (Gujarat), PIN : 394510
Tel. : +91 – 261 – 353 6959, 353 5999, 353 5086

F O R M - V
ENVIRONMENTAL STATEMENT
For
The financial year ending
ON 31st MARCH 2023.

Reliance
Industries Limited
Growth is Life

Hazira Manufacturing Division
VILLAGE MORA, P.O. BHATHA
SURAT - HAZIRA ROAD
DIST. SURAT-394510

CONTENTS

Form V
(Rule 14 of EP Act 1986)

Environmental Statement for the financial year ending the 31st March 2023

PART - A

01. Name & Address of the Owner/ Occupier of the industry operation or process : **Shri Pawankumar Kapil**
Bunglow No-12, Sector –V,
Reliance Greens,
Jamnagar- 361142.

02. Industry Category :
Primary (STC Code) -
Secondary (SIC Code) -

03. Production Capacity :

Sr.No.	Plant	Capacity*
a.	Mono Ethylene Glycol (MEG)	7,20,000 MTPA
b.	Poly Vinyl Chloride (PVC)	4,75,000 MTPA
c.	Vinyl Chloride Monomer (VCM)	4,75,000 MTPA
d.	Poly Ethylene (PE)	5,50,000 MTPA
e.	Partially Oriented Yarn (POY) + Chips (including IDY, FDY)	4,90,000 MTPA
f.	Polyester Staple Fibre (PSF) + Chips	5,40,000 MTPA
g.	Poly Propylene (PP)	5,00,000 MTPA
h.	Pure Terepthalic Acid	21,00,000 MTPA
i.	Polyester Staple Fibre Fill (PSFF)	1,00,000 MTPA
j.	Poly Ethylene Terephthalate (PET)	5,20,000 MTPA
k.	Cracker (Ethylene+ Propylene)	15,00,000 MTPA
l.	Relpipe (HDPE Pipes & ducts)	1,21,000 MTPA
m.	Para Di Ethyl Benzene (PDEB)	10,000 MTPA
n.	Butadiene	2,10,000 MTPA
o.	Aromatics (Benzene+ Toluene)	5,21,400 MTPA
p.	Butene-1	80,000 MTPA
q.	MTBE	2,00,000 MTPA
r.	SBR	2,00,000 MTPA
s.	PBR	60,000 MTPA
t.	CCPP/CPP	499 MW
u.	Shipping and Tank Farm	3 Jetties, 1 SBM and pipelines

* MTPA: Metric Tonnes Per Annum

04. Year of Establishment :

Sr.No.	Plant	Year of Commissioning
a.	Captive Power Plant	1991
b.	Mono Ethylene Glycol (MEG)	1991
c.	Poly Vinyl Chloride (PVC)	1991
d.	Poly Ethylene (PE)	1992
e.	Partially Oriented Yarn (POY)	1995
f.	Polyester Staple Fibre (PSFF)	1996
g.	Poly Propylene (PP)	1996
h.	Pure Terephthalic Acid (PTA)	1997
i.	Polyester Staple Fibre Fill (PSFF)	1997
j.	Poly Ethylene Terepthalate (PET)	1997
k.	Cracker	1997
l.	Relpipe plant	2000
m.	Butadiene	2005
n.	Butene1/MTBE	2012
o.	PBR	2014
p.	Relpipe-2	2014
q.	SBR	2014
r.	CCPP	2016

05. Date of last Environmental Statement submitted: 22.09.2022.

PART – B

WATER AND RAW MATERIAL CONSUMPTION:

I. Water Consumption, M3/day : 115163

A. Process : 28019
B. Domestic : 572
C. Cooling & Boiler Feed : 86572

Sr. No.	Name of Product	Water Consumption per unit of product	
		During the previous Financial year (2021-22)	During the current Financial year (2022-23)
1.	MEG	6.98 M3/MT	6.00 M3/MT
2.	PVC	6.87 M3/MT	6.04 M3/MT
3.	PE	3.53 M3/MT	3.65 M3/MT
4.	POY	2.57 M3/MT	2.02 M3/MT
5.	PSF	4.18 M3/MT	3.57 M3/MT
6.	PET	1.53 M3/MT	1.16 M3/MT
7.	PSFF	2.06 M3/MT	2.20 M3/MT
8.	PTA	5.69 M3/MT	5.27 M3/MT

9.	PP	1.97 M3/MT	1.98 M3/MT
10.	Ethylene & Propylene (Cracker Plant)	5.11 M3/MT	4.93M3/MT
11.	Benzene & Toluene (Aromatics)	2.44 M3/MT	3.72 M3/MT
12.	Butadiene	2.79 M3/MT	3.18 M3/MT
13.	CCPP +CPP	2.86 M3/MWH	2.39 M3/MWH
14.	Butene1/MTBE	2.54 M3/MT	2.63 M3/MT
15.	HDPE Pipes	0.13 M3/MT	0.37 M3/MT
16.	PBR	10.60 M3/MT	9.96 M3/MT
17.	SBR	9.28 M3/MT	8.32 M3/MT

II. Raw Material Consumption:

Sr. No.	Product	Raw Material Used	Raw Material Consumption per unit of product	
			During the previous Financial year (2021-22)	During the current Financial year (2022-23)
01.	Power	Gas	0.325 KSM3/MWH	0.719 KSM3/MW
		Liquid Fuel	0.00002 KSM3/MWH	0.00001MT/KSM3
		Coal	0.574 MT/MWH 0.140 MT/MT of Steam (CCPP)	0.549 MT/MW 0.133 MT/MT of Steam (CCPP)
		Biomass	--	0.065 MT/MW 0.016 MT/MT of Steam (CCPP)
02.	MEG	Ethylene Oxygen	0.776 MT/MT 0.725 MT/MT	0.766 MT/MT 0.707 MT/MT
03.	PVC	Ethylene EDC Chlorine	0.236 MT/MT 0.845 MT/MT 0.004 MT/MT	0.235 MT/MT 0.841 MT/MT 0.004 MT/MT
04.	PE	Ethylene Butene* Octene* (*co-monomer)	0.963 MT/MT 0.038 MT/MT 0.009 MT/MT	0.968 MT/MT 0.043 MT/MT 0.006 MT/MT
05.	POY	PTA MEG	0.843 MT/MT 0.327 MT/MT	0.842 MT/MT 0.325 MT/MT
06.	PSF	PTA MEG	0.860 MT/MT 0.335 MT/MT	0.861 MT/MT 0.335 MT/MT
07.	PET	PTA MEG	0.838 MT/MT 0.332 MT/MT	0.842 MT/MT 0.333 MT/MT
08.	PSFF	MEG PET Flakes/ Fiber	0.266 MT/MT 0.622 MT/MT	0.262 MT/MT 0.682 MT/MT
09.	PTA	Paraxylene	0.659 MT/MT	0.658 MT/MT

Sr. No.	Product	Raw Material Used	Raw Material Consumption per unit of product	
			During the previous Financial year (2021-22)	During the current Financial year (2022-23)
		Acetic Acid	0.043 MT/MT	0.044 MT/MT
10.	PP	Propylene Ethylene	0.969 MT/MT 0.053 MT/MT	0.966 MT/MT 0.055 MT/MT
11.	Ethylene+ Propylene	Naphtha Gas	1.347 MT/MT 0.346 MT/MT	1.524 MT/MT 0.240 MT/MT
12.	Benzene+ Toluene	C6-C8	1.450 MT/MT	1.445 MT/MT
13.	Butadiene	Mix C4	1.985 MT/MT	2.015 MT/MT
14.	PP Catalyst	TiCl4 Ethyl Benzoate	6.626 Kg/Kg 0.185 Kg/Kg	7.053 Kg/Kg 0.025 Kg/Kg
15.	Butene-1	mixture of C4	2.526 MT/MT	2.491 MT/MT
16.	MTBE	mixture of C4 Methanol	1.714 MT/MT 0.362 MT/MT	1.625 MT/MT 0.365 MT/MT
17.	HDPE Pipes	Main Resin	0.904 MT/MT	0.900 MT/MT
18.	SBR	Butadiene	0.648 MT/MT	0.634 MT/MT
19.	PBR	Butadiene	1.060 MT/MT	1.064 MT/MT

PART - C

POLLUTION DISCHARGED TO ENVIRONMENT:
(Parameters as specified in the consent issued).

I. WATER:

Sr. No.	Pollutants	Quantity of Pollutants Discharged (Kg./day)	Av. Concentration of pollutants in discharge	GPCB norms	Unit	% variation from standard
1	Temperature		30	40	°C	-25
2	pH		7.5	6.5 to 8.5	---	Nil
3	Colour		25	100	Pt-Co Scale	-75
4	Suspended Solids	692	16	100	mg/l	-84
5	Ammonical Nitrogen		3	50	mg/l	-93
6	BOD(3 days at 27 °C)	850	20	50	mg/l	-60
7	COD	3568	84	250	mg/l	-66
8	Oil and Grease	60	1.42	10	mg/l	-86

9	Phenolic Compounds		< 0.0005	1.00	mg/l	-99.95
10	Total Chromium		< 0.05	2.00	mg/l	-98
11	Zinc		0.18	5.0	mg/l	-96
12	Copper		< 0.04	2.0	mg/l	-98
13	Nickel		0.109	3.0	mg/l	-96
14	Lead		< 0.02	0.1	mg/l	-80
15	Sulphides		0.09	2.0	mg/l	-95
16	Hexavalent Chromium		< 0.05	0.10	mg/l	-50
17	Cyanides		< 0.01	0.20	mg/l	-95
18	Flourides		0.59	1.50	mg/l	-61
19	Mercury		< 0.001	0.01	mg/l	-90
20	Bio-assay Test		100%	90% survival of fish after 96 hrs. in 100 % effluent	% survival	-11

II AIR EMISSION (STACK MONITORING):

Sr. No.	Pollutants	Quantity of Pollutants Discharged (Kg./day)	Av. Concentration of pollutants in discharge	Percentage variation from standard
a.	PM	786	11.37 mg/Nm^3	-79
b.	SO_2	5709	19.41 mg/NM3	-91
c.	NO_x	10988	83.57 mg/Nm3	-65

PART - D

HAZARDOUS WASTE

(As Specified under Hazardous Waste (Management, Handling & Transboundary Movement) Rules 2008 under E.P. Act-1986):

Hazardous Waste		Total Quantity (Kg.)	
		During previous Financial year (2021-22)	During current Financial year (2022-23)
A.	From Process Plant		
1)	Coke (VCM/ Cracker)	77850	46520
2)	Organic Residues	214350	744863
3)	Spent Molecular Sieves	Nil	Nil
4)	Spent Catalyst	Nil	498539

Hazardous Waste		Total Quantity (Kg.)	
		During previous Financial year (2021-22)	During current Financial year (2022-23)
5)	Slop oil from Waste Water plant/Waste Oil	309450	460340
6)	Used/Spent oil	50270	169080
7)	Acid alkaline residue	Please refer below note-1	Please refer below note-1
8)	Spent Solvent	7530	Nil
9)	Distillation residues (PE column residue)	114860	134800
10)	Chemical containing residue form decontamination and disposal	Please refer below note-2	Please refer below note-2
11)	Discarded containers / barrels	89984 Nos. (Please refer below note-3)	84560 Nos. (Please refer below note-3)
	Discarded containers / barrels (Used empty paint drums)	22440	50190
12)	Spent carbon	35730	52930
13)	Filter Medium	8310	4980
14)	Battery Acid / electrolyte	700 Liters	4390 Liters
15)	TiO2 Slurry	21560	17950
16)	Spent Nickel Cadmium Batteries	Nil	22420
17)	Mercury bearing waste	Nil	Nil
18)	Spent lead acid batteries & other lead containing waste	27220	119250
19)	Degraded Dowtherm	6120	43630
20)	Zinc Oxide	Nil	24000
21)	Process Waste (EDC Bottom Dry Waste) from RIL Hazira to RIL Dahej for Incineration.	Nil	Nil
22)	E-waste	26710	48840
23)	Furnace Reactor Residues and debris (from PBR & SBR Plants)	Nil	Nil
24)	Residues of additives used in plastic manufacturing like dyestuff, stabilizers, flame retardants	990	Nil

Hazardous Waste		Total Quantity (Kg.)	
		During previous Financial year (2021-22)	During current Financial year (2022-23)
25)	Residue from Vinyl Chloride Monomer (EDC Bottom) Dry (EBD) waste from RIL VMD to RIL HMD for Incineration	1085910	961270
26)	Insulated copper wire scrap/ copper with PVC sheathing including ISRI code material namely druid	3900	43260
B	**From Pollution Control facility:**		
1)	Chemical Sludge from Waste Water Treatment	142700	329530
2)	Incineration Ash – HW incinerator/ PTA Plant	5910	Nil

Note:

1. Acid alkali residues generated during chemical cleaning of pipes were collected & treated along with other effluent. Therefore, it is difficult to quantify. However, the quantity is insignificant as compared to the quantity of remaining process effluent.
2. Wastewater generated during cleaning of drums /barrels/carboys etc. becomes an integral part of the process effluent.
3. The type of containers (drums/plastic bags/ carboys) varies with the type of materials and the supplier.

PART - E

Solid Waste:

Solid Waste		Total Quantity (MT)	
		During previous Financial year (2021-22)	During current Financial year (2022-23)
a.	**From Process**		
	Spent Alumina	3399.60	2449.03
	Oligomer / Monomer	493.98	206.10
	Spent Molecular Sieve	175.86	66.37
	Spent Silica gel	306.85	307.14
	Insulation waste	314.09	878.76

	Office Garbage	64.46	117.45
	Spent Clay	Nil	Nil
	Spent Ion Resins	64.66	148.75
	Cartridge filters from DMRO Unit, FRP etc	111.06	229.82
	Charred Polymer	10.17	9.19
	Rhypox Froth	4.98	22.34
	Spent Molecular Sieves with Ceramic Balls	11.95	27.66
	Plastics Waste	888.10	1165.70
b.	**From Pollution Control Facility**		
	Biological sludge	1469.00	1388.00
	Fly Ash from Coal Based Captive Power Plant	388721.20	243075.54
c.	1. Quantity of recycle or reutilize within the unit	1469.00	1388.00
	2. Sold	393567.34	247013.82
	3. Disposed through Co-processing at Cement Plant	987.67	1662.37

*Fly Ash Utilization is as per Fly Ash Notifications

PART – F

Characterization (in terms of composition and quantum) of hazardous as well as solid wastes and indicates disposal practice adopted for both these categories of wastes.

A. Characteristics of Hazardous Waste as well as Solid Waste:

01. HAZARDOUS WASTE

(I) Chemical Sludge from Waste Water Treatment:

Sr. No.	Parameter	Concentration
a.	Iron as Fe (%)	6 ~ 14
b.	Copper (%)	1.5 ~ 2.0
c.	Cobalt in ppm	44 ~ 4000
d.	Manganese in ppm	400 ~1400
e.	Moisture Content (%)	10 ~ 20
f.	Salts, Silica &other Inorganic Impurities (%)	80 ~85
g.	Volatile Residues (%)	<5

(II) Slop oil from Waste Water plant/Waste Oil:

Sr. No.	Parameter	Concentration
a.	Sediment (%)	0.1 ~ 0.14
b.	Lead (ppm)	2.3 ~ 2.76
c.	Arsenic (ppm)	Not Detected
d.	Cd +Cr+Ni (ppm)	5.86 ~ 7.32
e.	PAH (%)	Not Detected
f.	Total Halogens (ppm)	1100 ~ 1284
g.	PCBs (ppm)	Not Detected
h.	Sulfur (%)	1.28 ~ 1.36
i.	Water Content (%)	0.74 ~ 0.82

(III) Used/Spent oil:

Sr. No.	Parameter	Concentration
a.	PCBs (ppm)	Not Detected
b.	Lead (ppm)	2.36 ~ 3.86
c.	Arsenic (ppm)	Not Detected
d.	Cd+Cr+Ni (ppm)	8.42 ~ 10.4
e.	PAH (%)	Not Detected

(IV) Spent Catalyst: (MEG plant)

Sr. No.	Parameter	Concentration
a.	Silver (%)	15 to 20 %
b.	Alumina (%)	Balance

(V) Spent Catalyst: (PTA Plant)

Sr. No.	Parameter	Concentration
a.	Palladium (%)	0.5
b.	Carbon (%)	Balance
c.	Moisture (%)	50 %

(VI) Incinerator Ash: From PTA Plant

Sr. No.	Parameter	Concentration
a.	Co(%)	10 ~ 15
b.	Mn. (%)	20 ~ 50
c.	Moisture & Inerts	Balance

(VII) Incinerator Ash from HW Incinerator:

Sr. No.	Parameter	Concentration
a.	TOC (%)	0 ~ 3
b.	Inorganic content (%)	97~99

(VIII) Coke: (VCM / Cracker)

Sr. No.	Parameter	Concentration
a.	Carbon (%)	90
b.	Moisture and other inorganic Impurities (%)	Balance

(IX) Degraded Dowtherm:

Sr. No.	Parameter	Concentration
a.	Dowtherm (%)	45 ~ 50
b.	High Boilers & Heavier (%)	45 ~ 50
c.	Low Boilers (%)	1 ~ 5

(X) Spent Catalysts from Cracker Plant:

Sr. No.	Parameter	Concentration
a.	Palladium (%)	0.2 ~ 3
b.	NiO (%)	8 ~ 11
c.	MoO3 (%)	5 ~ 14
d.	CoO(%)	1 ~ 3
e.	Promoter (%)	0.2
f.	Alumina (%)	Balance

(XI) Spent Catalyst from PP Plant:

Sr. No.	Parameter	Concentration
a.	Copper (%)	10 ~ 13
b.	Chromium (%)	0.5 ~ 1
c.	Palladium (%)	0.047 ~ 0.5
d.	Nickel (%)	0.4
e.	Nickel Oxide (%)	Not known
f.	Alumina (%)	Balance

(XII) EDC dry bottom waste:

Sr. No.	Parameter	Concentration
a.	EDC (%)	15 ~ 20
b.	TCE (%)	0 ~ 21
C.	Heavier (%)	Balance

(XIII) Spent solvent (Solvesso):

Sr. No.	Parameter	Concentration
a.	Aromatics (%)	~ 98.6
b.	EDC (%)	~ 1.32
c.	Lighters (ppm)	<100

(XIV) Distillation residues (PE column residue)

Sr. No.	Parameter	Concentration
a.	Cyclohexane (%)	80~20
b.	Low Molecular Weight Polyethylene (%)	20~80

(XV) Spent carbon:

Sr. No.	Parameter	Concentration
a.	Carbon (%)	95 ~ 99
b.	Moisture & Other impurities (%)	Balance

(XVI) Chemicals containing residues generated due to cleaning of barrels (Liquid)

Sr. No.	Parameter	Concentration
a.	Water contaminated with chemical residues	----

(XVII) Discarded containers / barrels (Solid) MS or Plastic containers

Sr. No.	Parameter	Concentration
a.	Empty Decontaminated barrels/carboys of MS and plastics	----

(XVIII) Spent lead acid batteries & other lead containing waste:

Sr. No.	Parameter	Concentration
a.	Lead (%)	Approx. 50
b.	Other part of battery	Balance

(XIX) Battery Acid / electrolyte

Sr. No.	Parameter	Concentration
a.	Battery Acid electrolyte	pH 2 to 3

(XX) Furnace Reactor Residues and debris (from PBR & SBR Plants)

Sr. No.	Parameter	Concentration
a.	Minerals & Organic matters	Mainly Butadiene Diamers & Trans Chain Polymer Gel

(XXI) Residues of additives used in plastic manufacturing like dyestuff, stabilizers, flame retardants

Sr. No.	Parameter	Concentration
a.	Organic matters	Contains different types of organics

02 SOLID WASTE:

(I) Spent Alumina:

Sr. No.	Parameter	Concentration
a.	Alumina as Al (%)	90~ 98
b.	Other Impurities (%)	Balance

(II) Biological Sludge (from ETP):

Sr. No.	Parameter	Concentration
a.	Moisture	5.56%
b.	Total Nitrogen	3.58%
c.	Total Phosphate as (P_2O_5)	6.73%
d.	Total Potassium as (K_2O)	0.52%
e.	Ash	15.78%
f.	Organic Matter	Balance
g.	GCV	4532 Kcal/Kg

(III) Oligomer Waste

Sr. No.	Parameter	Concentration

a.	Mixture of Ethylene terephthalate oligomers (%)	>97
b.	Additives (%)	Balance

(iv) Spent silica gel

Sr. No.	Parameter	Concentration
a.	Sodium Silicate (%)	99
b.	Moisture	balance

(IV) Spent Molecular Sieves

Sr. No.	Parameter	Concentration
a.	Zeolite (%)	99
b.	Moisture	balance

(V) Waste Insulation materials

Sr. No.	Parameter	Concentration
a.	Mineral wool (%)	96 ~ 99
b.	Moisture	balance

(VI) Spent Ion Resins:

Sr. No.	Parameter	Concentration
a.	Polymeric Resins (%)	Approx.50
b.	Moisture	Balance

(VII) Cartridge filters from DMRO Unit:

Sr. No.	Parameter	Concentration
a.	Polypropylene filter material	Approx.99
b.	Moisture	Balance

(VIII) Charred Polymer:

Sr. No.	Parameter	Concentration
a.	Melted polyester in solid form from Polyester pack cleaning (%)	100

(IX) Rhypox Forth:

Sr. No.	Parameter	Concentration
a.	Residues from Polyester pack cleaning	Approx.85
b.	Moisture	Balance

(X) Ceramic Balls:

Sr. No.	Parameter	Concentration
a.	Solid Ceramic material	Approx.99

(XI) Fly Ash

Sr. No.	Parameter	Concentration
a.	LOI	1~5 %
a.	Arsenic	Not Detected [as per Toxicity Characteristic Leaching Procedure (TCLP)]
b.	Mercury	Not Detected [as per Toxicity Characteristic Leaching Procedure (TCLP)]

B. Disposal Practice adopted:

01. HAZARDOUS WASTE:

a. Chemical Sludge from Waste Water Treatment:

A permanent membership of secured landfill site being operated by M/s BEIL Infrastructure Ltd., Ankleshwar has been obtained for the disposal of Chemical Sludge from Waste Water Treatment. During the year 2022-23 Chemical Sludge from Waste Water Treatment has been disposed of at landfill site.

b. Slop oil from Waste Water plant/Waste Oil & Used/Spent oil:

It is sold to approved recyclers / reprocessors.

c. Incinerator Ash (from PTA Plant):

It is sold to the various approved metal recovery units for the recovery of Co & Mn. The recovered Co & Mn is used for the manufacturing of the Cobalt Acetate & Manganese Acetate.

d. Incinerator Ash generated from Waste Incinerator:

It is collected in jumbo bags, stored in dedicated storage area, and disposed at TSDF at M/s BEIL Infrastructure Ltd., Ankleshwar.

e. Organic Residues:

The waste is collected in leakproof drums or jumbo bags depending on the type of waste & stored at designated location in plant. The waste is sent for Co-processing in Cement Industry and incinerated in the Hazardous waste incinerator installed at ETP.

f. Spent Solvent:

Spent solvent (solvesso) is collected in leak proof drums and sold to approved recyclers / reprocessors.

g. Distillation residues (PE Column Residue):

The waste is collected in drums and sold to reprocessor having valid CCA from pollution control board.

h. Spent Catalyst:

Spent catalyst generated is collected in MS drums and stored at designated storage location. It is sold to authorized reprocessor for recovery of metals. If not salable, it is sent to GPCB approved TSDF facility (BEIL, Ankleshwar) for disposal.

i. Degraded Dowtherm:

The waste is collected in drums and sold to an authorized reprocessor having valid CCA from state pollution control board.

j. Spent Carbon:

The waste is collected in leak proof jumbo bags and sold to authorized reprocessor / sent for Co-processing in Cement Industry

k. Coke:

Coke waste is collected in leakproof jumbo bags and stored at a designated location. The coke waste sent for Co-processing in Cement Industry.

l. EDC dry bottom:

The EDC dry bottom waste is incinerated at PVC (VCM) plant incinerator and in case of incinerator shut down it is sent to Reliance Industries Ltd; Dahej Manufacturing Unit for incineration.

m. TiO2 slurry:

The waste is collected in leak proof drums and sold to authorized reprocessors / recyclers.

n. Discarded containers / barrels:

Decontaminated containers & used empty paint drums are sold to authorized vendors.

o. **Spent lead acid batteries & other lead containing waste:**

The waste is sold to approved recyclers.

p. **Spent Nickel Cadmium Batteries:**

The waste as and when generated in future will be sold to authorized reprocessors / recyclers.

q. **Mercury bearing waste:**

The waste as and when generated sold to approved E-waste recyclers and also sent to GPCB approved TSDF facility (BEIL, Ankleshwar) for disposal.

r. **Zinc Oxide:**

The waste as and when generated in future will be sold to authorized reprocessors / recyclers.

s. **E waste**

The waste is sold to approved E-waste recyclers.

t. **Furnace Reactor Residues and debris (rubber gel & butadiene popcorn wastes) from PBR & SBR Plants**

The waste is collected in leakproof jumbo bags and stored at a designated location. It is sent for Co-processing in Cement Industry.

u. **Residues of additive used in plastic manufacturing like dyestuff, stabilizers, flame retardants**

The wastes as and when generated is treated in Central ETP along with other effluents or sent to approved recyclers / co-processing / incineration.

v. **Insulated copper wire scrap/copper with PVC sheathing including ISRI code material namely druid**

The waste is sold to authorized reprocessors/recyclers.

02. **SOLID WASTE:**

- Spent Silica gel, Spent Clay, Spent resins, Spent molecular sieves, Waste insulation wool, Charred Polymer, Rhypox Froth and Cartridge filters from DMRO are utilized by Co-processing in Cement Industry.
- Spent Alumina is being sold to the refractory manufacturers.
- Oligomer waste is sold to various processors for Resin preparation.

- Biological sludge is re-used in CCPP as renewable source of energy.

PART - G

Impact of pollution control facility on conservation of natural resources and on the cost of production.

Gaseous & Liquid wastes recycling /reuse in 2022~23:

As described above, the waste streams having value are recycled / reused. A few examples of gaseous and liquid waste recycling/reuse are:

- By implementing process vent gas recovery scheme, about 5264 MT of process vent gases (having a calorific value of 7500 KCAL/SCM) of one plant was reutilized as fuel in different plant – a sustainable practice.

- By adopting advanced anaerobic biological treatment produced Biogas –a renewable energy source and used it as fuel in DTA vaporizers in polyester complex (4964 MT). This helped to conserve natural gas.

- Reuse of low molecule polymer, waste additive & waste hydrocarbon as secondary fuel 3610 MT in PE plant.

- Recycling of 11278 MT unconverted Ethylene of PE plant in Cracker plant.

- Recovery of 50074 MT HCL in PVC plant and recycling in ETP, DM Plant and Cracker Plant.

- Recovery and recycling of EDC vapour ~ 4000 MT from storage tanks as liquid EDC

- Recovery of EDC from effluent stream and recycling it to process in VCM plant.

- Recycle of 16775 MT hard and soft fiber in PFF Plant.

PART - H

Additional measures / Investment proposal for environmental protection including abatement of pollution.

Co-processing of Hazardous and Non-Hazardous wastes - We have made agreement with M/s. Ambuja Cement Limited, Kodinar for Co-processing of wastes and total 2415 MT waste (HW+NHW) co-processed in the FY 2022-23. Also diverted part of CBAM/PTWM product for Co-processing.

Total 45 nos. of Environmental Management Programs were implemented during 2022~2023 in order to ensure continual improvement in Environmental performance (Environmental Management System – ISO – 14001:2015). These proposals required additional expense.

The Environment Management System is developed in accordance with international standard ISO - 14001: 2015. EMS Surveillance audit was carried out by M/s DNV. Due to implementation of Environmental Management System in accordance with ISO - 14001: 2015.

RIL- Hazira has also implemented RC-14001 and which is audited M/s DNV

The treated effluent generated from the LTDS section is recycled as cooling tower make up water and for DM water generation. Total 3920312 m3 of treated effluent recycled as cooling tower make up and DM water production.

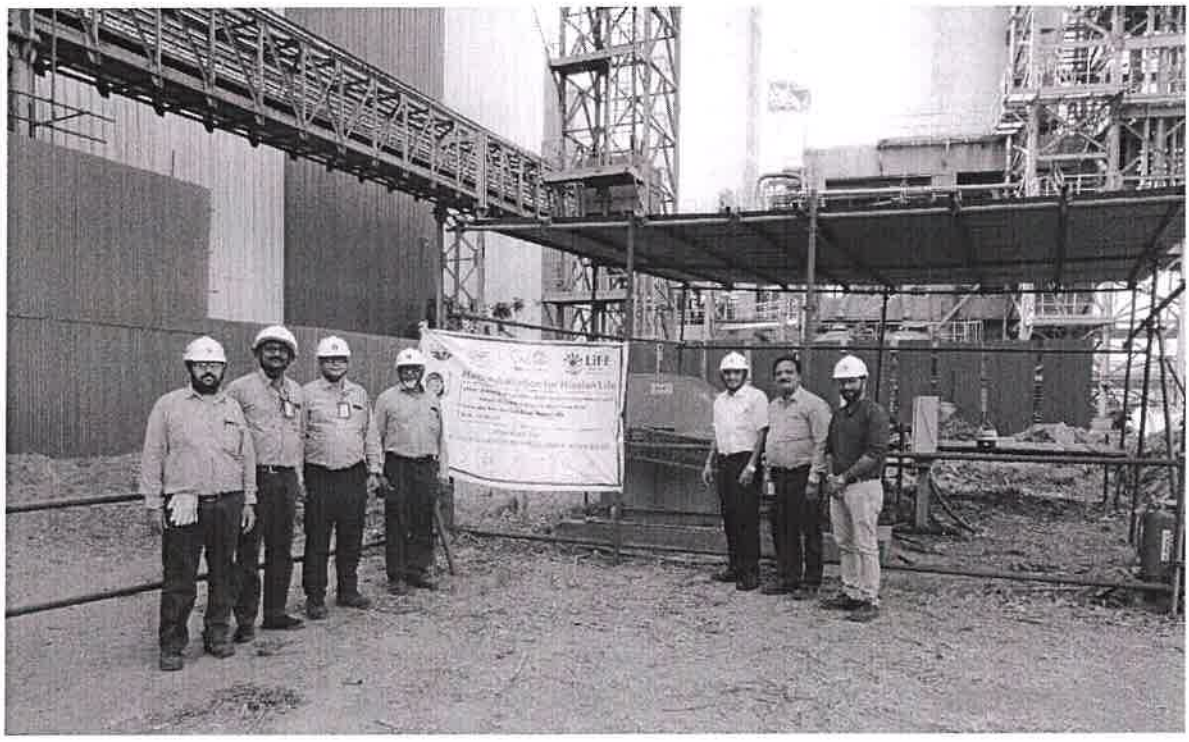
PART - I

HIGHLIGHTS ON ENVIRONMENT

Initiatives (2022~2023):

World Environment Day celebration on 05th June.

- Environment messages for awareness were circulated i. e. for WED Theme related.



- Environment awareness quiz competition was conducted.
- 200 nos. saplings of Planted within premises.

Other Highlights:

1) HMD-Polyester Manufacturing Division has received prestigious award from **FICCI** under category **"Environmentally Friendly Company Of The Year"** in Petrochemicals sector for year 2022 at a function conducted at Hotel Le Meridien, New Delhi on 2nd Nov 2022. The Category was Winner.

2) Recovery and Reuse of vented CO2 (23208 MT) from MEG plant is continue as a Green initiative on "Reduction in CO2 emission sustained during the year.

3) Total 97.02 % Waste Utilization (HW+NHW) was achieved in FY 2022-23 by recycling/reprocessing and co-processing.

4) EMS Audit has been done by M/s. DNV for standards ISO-14001-2015 and RC-14001-2015.

5) Sustainability Audit carried out by M/s. KPMG.

Dated

(Signature of a person carrying out an Industry, operation or process)

Date: 18.09.2023

Name : **Shri Shantanu Date**
Designation : **Site President**
Address : Reliance Industries Ltd.,
Village Mora, P.O. Bhatha,
Dist. Surat - 394 510.

Reliance Industries Ltd.,
Hazira Manufacturing Division
VILLAGE MORA, P.O. BHATHA
SURAT - HAZIRA ROAD
DIST. SURAT-394510

Reliance Ind. Ltd. Hazira Mfg. Division	**INSPECTION & CORROSION SECTION** **(CENTRAL ENGINEERING SERVICES)**

INSPECTION NOTE

FORWARDED TO:	Sh Sanjay Pandya	NOTE NO:	I&C / ETP / 2020 / 01
PLANT:	ETP	DATE:	11.11.2020
TAG NO:	30”/32”-ND-23615-A1A1		
DESCRIPTION:	Final effluent discharge line	Inspected On	11.11.2020
REASON FOR INSPECTION / REFERENCE SCHEDULLED WALK THROUGH SURVEY OF FINAL EFFLUENT DISCHARGE LINE Inspector:- Parin Shah			

Visual Observations:

Walk through survey carried out for the line as per API 570 (section 9)

- External Survey carried out on and adjacent areas to pipeline & found satisfactory. Buried piping found free from any change in the surface contour of the ground, discoloration of the soil, softening of paving asphalt, pool formation, bubbling water puddles & noticeable odor.

- Soil to air interface inspection carried out & found satisfactory. Interface found free from any corrosion, pitting.

- Ultrasonic thickness survey done to check internal corrosion for the line at identified condition monitoring locations & thickness of line found within limits.

Conclusion: over all condition of line found satisfactory.

Reliance Ind. Ltd.
Hazira Mfg. Division

INSPECTION & CORROSION SECTION
(CENTRAL ENGINEERING SERVICES)

Industrial X-Ray & Allied Radiographers (I) Pvt.Ltd.
102, Faizan Apartment, 1st Floor, S. V. Road, Jogeshwari (West), Mumbai - 400 102.

ULTRASONICTHICKNESS REPORT

TEST CARRIED OUT NO BEHALF OF	MS/ RELIANCE INDUSTRIES LTD.HAZIRA	REPORT NO.	2021
WORN ORDER NO:	CCM/260024788	REPORT NO DATE.	11 | 11 | 20
LINE / TAG NO:	30" | 32" - ND - 23615 - A1A	PLANT	ETP
DESCRIPTION:		TEST DATE	11 | 11 | 20
MATTERIAL SPECIFICATION		CS / SS	
TEST DATE			
APPROVED PROCEDURE	.IXAR/NDE/RIL/TMP-01		
TEST EQUIPMENT	OLYMPUS	MACHINE NO.	181254909

PROBE USED	NAME	TYPE	SIZE	FREQUENCY
NORMAL	DOUBLE CRYSTAL	T/R	10MM	5 MHZ

COUPLANT	GREASE
METHOD	CONTACT

BASIC CALIBRATION BLOCK	STEP-WEDGE	RANGE	2.0 -TO- 100MM

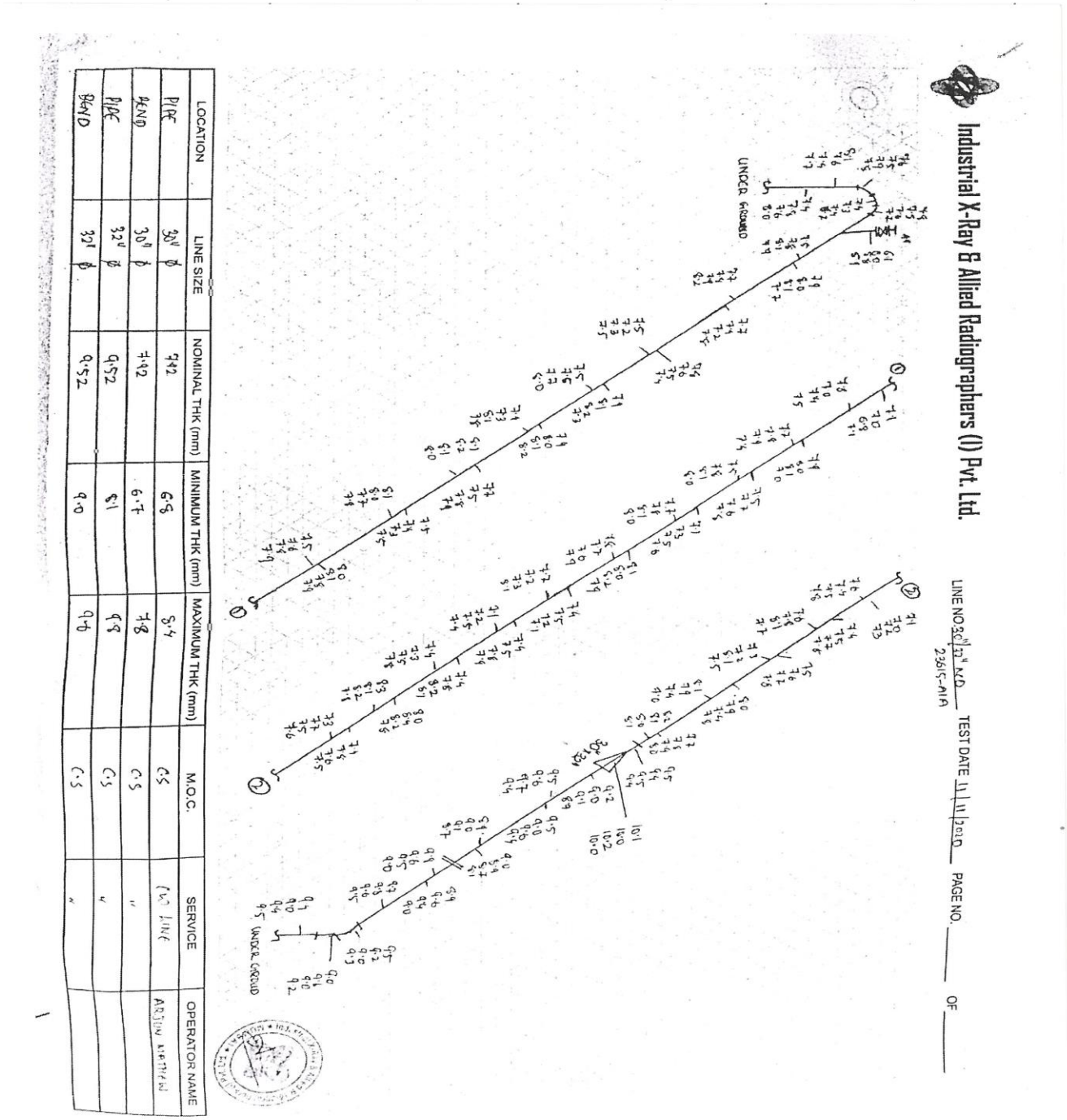
CALIBRATION	DATE 11 | 11 | 20 BY/NAME SHAILESH GHARATKAR QUALIFICATIO ASNT LEVEL -II

TEST RESULT

LOCATION	PIPE	BEND	PIPE	BEND			
NOMINAL THICKNESS	7.92	7.92	9.52	9.52			
MEASURED MIN THICKNESS	6.8	6.7	8.1	9.0			
MEASURED MAX THICKNESS	8.4	7.8	9.8	9.6			

OBSERVATION & REMARKS:

FOR INDUSTRIAL X-RAY & ALLIED RADIOGRAPHY (I) PVT.LTD.



LOCATION	LINE SIZE	NOMINAL THK (mm)	MINIMUM THK (mm)	MAXIMUM THK (mm)	M.O.C.	SERVICE	OPERATOR NAME
PIPE	30" ϕ	7.92	6.9	8.4	C.S	[illegible] LINE	[illegible]
BEND	30" ϕ	7.92	6.7	7.8	C.S	"	
PIPE	32" ϕ	9.52	8.1	9.9	C.S	"	
BEND	32" ϕ	9.52	9.0	9.4	C.S	"	

Prepared by
Parin Shah

Approved By
Milinkumar Desai

Annexure VIII

Details of Hazardous waste Storage, Treatment ,Disposal and Characteristics

a. Chemical Sludge from Waste Water Treatment:

A permanent membership of secured landfill site being operated by M/s BEIL Infrastructure Ltd., Ankleshwar has been obtained for the disposal of Chemical Sludge from Waste Water Treatment. During the year 2022-23 Chemical Sludge from Waste Water Treatment has been disposed of at landfill site.

b. Slop oil from Waste Water plant/Waste Oil & Used/Spent oil:

It is sold to approved recyclers / reprocessors.

c. Incinerator Ash (from PTA Plant):

It is sold to the various approved metal recovery units for the recovery of Co & Mn. The recovered Co & Mn is used for the manufacturing of the Cobalt Acetate & Manganese Acetate.

d. Incinerator Ash generated from Waste Incinerator:

It is collected in jumbo bags, stored in dedicated storage area, and disposed at TSDF at M/s BEIL Infrastructure Ltd., Ankleshwar.

e. Organic Residues:

The waste is collected in leakproof drums or jumbo bags depending on the type of waste & stored at designated location in plant. The waste is sent for Co-processing in Cement Industry and incinerated in the Hazardous waste incinerator installed at ETP.

f. Spent Solvent:

Spent solvent (solvesso) is collected in leak proof drums and sold to approved recyclers / reprocessors.

g. Distillation residues (PE Column Residue):

The waste is collected in drums and sold to reprocessor having valid CCA from pollution control board.

h. Spent Catalyst:

Spent catalyst generated is collected in MS drums and stored at designated storage location. It is sold to authorized reprocessor for recovery of metals. If not salable, it is sent to GPCB approved TSDF facility (BEIL, Ankleshwar) for disposal.

i. Degraded Dowtherm:

The waste is collected in drums and sold to an authorized reprocessor having valid CCA from state pollution control board.

j. Spent Carbon:

The waste is collected in leak proof jumbo bags and sold to authorized reprocessor / sent for Co-processing in Cement Industry

k. Coke:

Coke waste is collected in leakproof jumbo bags and stored at a designated location. The coke waste sent for Co-processing in Cement Industry.

l. EDC dry bottom:

The EDC dry bottom waste is incinerated at PVC (VCM) plant incinerator and in case of incinerator shut down it is sent to Reliance Industries Ltd; Dahej Manufacturing Unit for incineration.

m. TiO2 slurry:

The waste is collected in leak proof drums and sold to authorized reprocessors / recyclers.

n. Discarded containers / barrels:

Decontaminated containers & used empty paint drums are sold to authorized vendors.

o. Spent lead acid batteries & other lead containing waste:

The waste is sold to approved recyclers.

p. Spent Nickel Cadmium Batteries:

The waste as and when generated in future will be sold to authorized reprocessors / recyclers.

q. Mercury bearing waste:

The waste as and when generated sold to approved E-waste recyclers and also sent to GPCB approved TSDF facility (BEIL, Ankleshwar) for disposal.

r. Zinc Oxide:

The waste as and when generated in future will be sold to authorized reprocessors / recyclers.

s. E waste

The waste is sold to approved E-waste recyclers.

t. Furnace Reactor Residues and debris (rubber gel & butadiene popcorn wastes) from PBR & SBR Plants

The waste is collected in leakproof jumbo bags and stored at a designated location. It is sent for Co-processing in Cement Industry.

u. Residues of additive used in plastic manufacturing like dyestuff, stabilizers, flame retardants

The wastes as and when generated is treated in Central ETP along with other effluents or sent to approved recyclers / co-processing / incineration.

v. Insulated copper wire scrap/copper with PVC sheathing including ISRI code material namely druid

The waste is sold to authorized reprocessors/recyclers.

Characteristics of Hazardous Waste:

(I) Chemical Sludge from Waste Water Treatment:

Sr. No.	Parameter	Concentration
a.	Iron as Fe (%)	6 ~ 14
b.	Copper (%)	1.5 ~ 2.0
c.	Cobalt in ppm	44 ~ 4000
d.	Manganese in ppm	400 ~1400
e.	Moisture Content (%)	10 ~ 20
f.	Salts, Silica &other Inorganic Impurities (%)	80 ~85
g.	Volatile Residues (%)	<5

(II) Slop oil from Waste Water plant/Waste Oil:

Sr. No.	Parameter	Concentration
a.	Sediment (%)	0.1 ~ 0.14
b.	Lead (ppm)	2.3 ~ 2.76
c.	Arsenic (ppm)	Not Detected
d.	Cd +Cr+Ni (ppm)	5.86 ~ 7.32
e.	PAH (%)	Not Detected
f.	Total Halogens (ppm)	1100 ~ 1284
g.	PCBs (ppm)	Not Detected
h.	Sulfur (%)	1.28 ~ 1.36
i.	Water Content (%)	0.74 ~ 0.82

(III) Used/Spent oil:

Sr. No.	Parameter	Concentration
a.	PCBs (ppm)	Not Detected
b.	Lead (ppm)	2.36 ~ 3.86
c.	Arsenic (ppm)	Not Detected
d.	Cd+Cr+Ni (ppm)	8.42 ~ 10.4

e.	PAH (%)	Not Detected

(IV) Spent Catalyst: (MEG plant)

Sr. No.	Parameter	Concentration
a.	Silver (%)	15 to 20 %
b.	Alumina (%)	Balance

(V) Spent Catalyst: (PTA Plant)

Sr. No.	Parameter	Concentration
a.	Palladium (%)	0.5
b.	Carbon (%)	Balance
c.	Moisture (%)	50 %

(VI) Incinerator Ash: From PTA Plant

Sr. No.	Parameter	Concentration
a.	Co(%)	10 ~ 15
b.	Mn. (%)	20 ~ 50
c.	Moisture & Inerts	Balance

(VII) Incinerator Ash from HW Incinerator:

Sr. No.	Parameter	Concentration
a.	TOC (%)	0 ~ 3
b.	Inorganic content (%)	97~99

(VIII) Coke: (VCM / Cracker)

Sr. No.	Parameter	Concentration
a.	Carbon (%)	90
b.	Moisture and other inorganic Impurities (%)	Balance

(IX) Degraded Dowtherm :

Sr. No.	Parameter	Concentration
a.	Dowtherm (%)	45 ~ 50
b.	High Boilers & Heavier (%)	45 ~ 50
c.	Low Boilers (%)	1 ~ 5

(X) Spent Catalysts from Cracker Plant:

Sr. No.	Parameter	Concentration
a.	Palladium (%)	0.2 ~ 3
b.	NiO (%)	8 ~ 11
c.	MoO3 (%)	5 ~ 14
d.	CoO(%)	1 ~ 3
e.	Promoter (%)	0.2
f.	Alumina (%)	Balance

(XI) Spent Catalyst from PP Plant:

Sr. No.	Parameter	Concentration
a.	Copper (%)	10 ~ 13
b.	Chromium (%)	0.5 ~ 1
c.	Palladium (%)	0.047 ~ 0.5
d.	Nickel (%)	0.4
e.	Nickel Oxide (%)	Not known
f.	Alumina (%)	Balance

(XII) EDC dry bottom waste:

Sr. No.	Parameter	Concentration
a.	EDC (%)	15 ~ 20
b.	TCE (%)	0 ~ 21
C.	Heavier (%)	Balance

(XIII) Spent solvent (Solvesso):

Sr. No.	Parameter	Concentration
a.	Aromatics (%)	~ 98.6
b.	EDC (%)	~ 1.32
c.	Lighters (ppm)	<100

(XIV) Distillation residues (PE column residue)

Sr. No.	Parameter	Concentration
a.	Cyclohexane (%)	80~20
b.	Low Molecular Weight Polyethylene (%)	20~80

(XV) Spent carbon:

Sr. No.	Parameter	Concentration
a.	Carbon (%)	95 ~ 99
b.	Moisture & Other impurities (%)	Balance

(XVI) Chemicals containing residues generated due to cleaning of barrels (Liquid)

Sr. No.	Parameter	Concentration
a.	Water contaminated with chemical residues	----

(XVII) Discarded containers / barrels (Solid) MS or Plastic containers

Sr. No.	Parameter	Concentration
a.	Empty Decontaminated barrels/carboys of MS and plastics	----

(XVIII) Spent lead acid batteries & other lead containing waste:

Sr. No.	Parameter	Concentration
a.	Lead (%)	Approx. 50
b.	Other part of battery	Balance

(XIX) Battery Acid / electrolyte

Sr. No.	Parameter	Concentration
a.	Battery Acid electrolyte	pH 2 to 3

(XX) Furnace Reactor Residues and debris (from PBR & SBR Plants)

Sr. No.	Parameter	Concentration
a.	Minerals & Organic matters	Mainly Butadiene Diamers & Trans Chain Polymer Gel

(XXI) Residues of additives used in plastic manufacturing like dyestuff, stabilizers, flame retardants

Sr. No.	Parameter	Concentration
a.	Organic matters	Contains different types of organics

Annexure-IX

Ground Water Monitoring Reports April-Sep 23

			Sampling Locations					
Sl. No.	**Parameter**	**Unit** / **Sample Point**	**Hazira**	**Piplod**	**Ichhapour**	**Junagam**	**Bhatlai**	**Dumas**
1	pH	--	8.1	8.2	8.0	8.5	8.3	8.4
2	COD	ppm	12	12	8	8	12	13
3	TDS	ppm	970	6955	915	800	1050	890
4	BOD	ppm	<10	<10	<10	<10	<10	<10
5	T-Alkalinity	ppm	300	220	285	265	335	290
6	Fe	ppm	<0.1	<0.1	<0.1	0.1	<0.1	<0.1
7	Total Hardness	ppm	505	245	455	465	540	520
8	Ca-Hardness	ppm	180	215	190	160	210	195
9	Chloride as Cl	ppm	200	3710	195	185	230	205
10	Sulphate as SO4	ppm	61	52	77	78	82	84
11	Salinity	ppm	361	6695	350	335	415	370
12	Total Nitrogen	ppm	15	1.1	12.0	16	14	14
13	Phosphate as P	ppm	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
14	Na	ppm	84	1900	95	80	96	102
15	Cu	ppm	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
16	Ni	0	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
17	Pb	ppm	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
18	Zn	ppm	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Reliance
Industries Limited

CIN # L17110MH1973PLC019786

RIL/HMD/HO/GPCB/2023-24/03

27th June 2023

Member Secretary,
Gujarat Pollution Control Board,
Paryavaran Bhavan,
Sector – 10 A
Gandhinagar.

Subject : Submission of Environmental Audit Report FY: 2022-23 of RIL-Hazira

Ref : CCA order no- AWH-108333 (RIL -Hazira PCB ID-21170)

Dear Sir,

In accordance with the directives given in Special Civil Application 163 / 95 in SCA – 770/96 by Hon'ble High court on 20-12-96 and MCA-326 of 1997 in SCA – 770/95 on 13-03-97, we are submitting here with the Environmental Audit Report (in triplicate) for our Hazira complex for the year 2022-2023.

The Scrutiny fees INR 10,000 has been paid by RIL-Hazira to GPCB. The Net payment transaction has been made on 12.06.2023 and reference number for the transaction is XICO1202660251. The online payment receipt is also attached herewith for your ready ref.

Thanking you,

Yours faithfully,
For Reliance Industries Limited

Premal Shah
Head- Environment

30/06/23

Gujarat Pollution Control Board
Head Office
Sector No.-10-A,
Gandhinagar-382010

Vill. : Mora. P.O. : Bhatha, Surat – Hazira Road, Surat – 394 510 Tel : +91-261-4135999, 4135355 Fax : +91-261-4135099

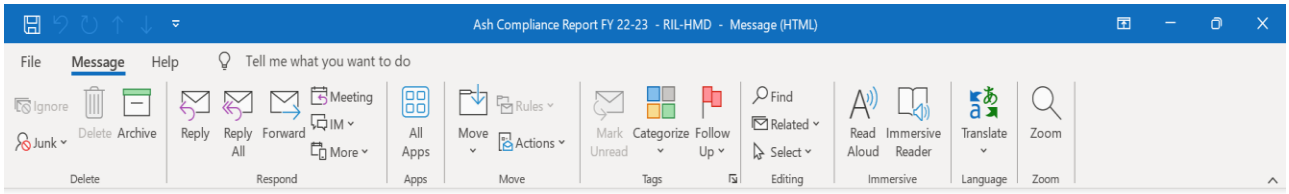
ENVIRONMENTAL AUDIT REPORT
(AUDIT PERIOD: April 2022 TO March 2023)

M/s. Reliance Industries Limited
(Hazira Manufacturing Division)
Village: Mora, Po: Bhatha,
Surat – Hazira Road, Dist: Surat – 394510

ENVIROCHEM AUDIT CELL
CHEMICAL ENGINEERING DEPARTMENT

SARDAR VALLABHBHAI PATEL EDUCATION SOCIETY MANAGED
R. N. G. PATEL INSTITUTE OF TECHNOLOGY
AT: ISROLI, PO: AFWA, VIA VANKANER, TAL: BARDOLI,
DIST.:- SURAT – 394 620
PHONE NO.: +919228000867
E-mail: fetr.bardoli@gmail.com Website: www.svnosfetr.ac.in

Annexure -XI



Ash Compliance Report FY 22-23 - RIL-HMD

Premal Shah
To IRO Gandhinagar; moefcc-coalash@gov.in; Member Secretary CPCB
Cc Prashant Gogate

Reply | Reply All | Forward

Tue 25-04-2023 14:45

Ash Compliance Report 2022-23_RIL _HMD.pdf
.pdf File

Sir

With reference to Fly Ash Notification dated 31.12.2021, please find attached the Ash Compliance Report of RIL-HMD for FY 2022-23.

This is submitted for your information and perusal please.

Regards

Premal Shah
AVP & Head Environment
Reliance Industries Limited (RIL)
Hazira Manufacturing Division (HMD)

Reliance
Industries Limited
CIN # L17110MH1973PLC019786

25th Apr,2023

Gujarat Pollution Control Board,
Paryavaran Bhavan,
Sector 10 A,
Gandhinagar - 382010

Kind Attn : Shri M R Makwana (Surat Unit Head)

Sub : Submission of Ash Compliance Report of 360 MW Coal based Power Plant of RIL-HMD for FY 2022-23 (PCB ID-21170)
Ref : Fly Ash Notification dated 31.12.2021

Dear Sir,

With reference to above referred Fly Ash Notification, please find attached herewith Ash compliance Report containing details about Fly Ash Generation and Utilization during FY 2022-23 in prescribe format.

For your information & records please.

Thanking you,

Yours faithfully,
For Reliance Industries Limited

(Premal Shah)
Head - Environment

Encl: As above

Hazira Manufacturing Division
Village-Mora, Post-Bhatha, Surat-Hazira Road, Dist. Surat (Gujarat), PIN : 394510
Tel. : +91 – 261 – 353 6959, 353 5999, 353 5086

Registered Office : 3rd Floor, Maker Chambers IV, 222, Nariman Point. Mumbai – 400 021, India.

Annexure

Ash Compliance Report (for the period 1st April 2022-31st March 2023) to be submitted on or before 31st May.

Sl. No.	Details	
1.	Name of Power Plant	Captive Cogeneration Power Plant (CCPP)
2.	Name of the company	M/s. Reliance Industries Limited, (RIL)
3.	District	Surat
4.	State	Gujarat
5.	Postal address for communication:	Mr. Premal Shah Head-Environment MAB Module-5, M/s. Reliance Industries Limited, (RIL), VIllage Mora, PO Bhatha,Surat-Hazira Road, Dist.-Surat PIN-394510
6.	E-mail:	Premal.Shah@ril.com
7.	Power Plant installed capacity (MW):	360 MW + steam generation for process
8.	Plant Load Factor (PLF):	72.3%
9.	No. of units generated (MWh):	2281268 MWH (Total during 2022-23)
10.	Total area under power plant (ha): (including area under ash ponds)	51 Hectare
11	Quantity of coal consumption during reporting period (Metric Tons per Annum):	Coal: 1810450 MTPA Biomass: 215939 MTPA
12	Average ash content in percentage (per cent):	11.45%
13.	Quantity of current ash generation during reporting period (Metric Tons per Annum): Fly ash (Metric Tons per Annum): Bottom ash (Metric Tons per Annum):	241758 MTPA 206671 MTPA 35087 MTPA
14.	Capacity of dry fly ash storage silo(s) (Metric Tons):	Total 4 Ash Silos are available 3 Silos of 1600 MT each for Fly Ash 1 Silos of 1600 MT for Bottom Ash
15.	Details of utilisation of current ash generated during reporting period (a) Total quantity of current ash utilised (MTPA) during reporting period: (b) Quantity of fly ash utilised (MTPA):	243076 MTPA

	(i) Fly ash based products (bricks or blocks or tiles or fibre cement sheets or pipes or boards or panels)	Nil
	(ii) Cement manufacturing:	207498 MTPA
	(iii) Ready mix concrete:	Nil
	(iv) Ash and Geo-polymer based construction material:	Nil
	(v) Manufacturing of sintered or cold bonded ash aggregate:	Nil
	(vi) Construction of roads, road and fly over embankment:	Nil
	(vii) Construction of dams:	Nil
	(viii) Filling up of low lying area:	4985 MTPA
	(ix) Filling of mine voids:	Nil
	(x) Use in overburden dumps:	Nil
	(xi) Agriculture:	Nil
	(xii) Construction of shoreline protection structures in coastal districts;	Nil
	(xiii) Export of ash to other countries:	Nil
	(xiv) Others (please specify):	Nil
	(c) Quantity of bottom ash utilised (MTPA):	
	(i) Fly ash based products (bricks or blocks or tiles or fibre cement sheets or pipes or boards or panels):	30592 MTPA Brick making
	(ii) Cement manufacturing:	Nil
	(iii) Ready mix concrete:	Nil
	(iv) Ash and Geo-polymer based construction material:	Nil
	(v) Manufacturing of sintered or cold bonded ash aggregate:	Nil

	(vi) Construction of roads, road and flyover embankment:	Nil
	(vii) Construction of dams:	Nil
	(viii) Filling up of low lying area:	Nil
	(ix) Filling of mine voids:	Nil
	(x) Use in overburden dumps:	Nil
	(xi) Agriculture:	Nil
	(xii) Construction of shoreline protection structures in coastal districts	Nil
	(xiii) Export of ash to other countries:	Nil
	(xiv) Others (please specify):	Nil
	Total quantity of current ash unutilised (MTPA) during reporting period:	0.0 MTPA
16.	Percentage utilisation of current ash generated during reporting period (per cent):	100 %
17.	Details of disposal of ash in ash ponds (a) Total quantity of ash disposed in ash pond(s) (Metric Tons) as on 31st March (excluding reporting period): (b) Quantity of ash disposed in ash pond(s) during reporting period (Metric Tons): (c) Total quantity of water consumption for slurry discharge into ash ponds during reporting period (m3): (d) Total number of ash ponds: (i) Active: (ii) Exhausted (yet to be reclaimed): (iii) Reclaimed: (e) total area under ash ponds (ha):	Not Applicable
18.	Individual ash pond details *Ash pond-1,2, etc (please provide below mentioned details separately, if number of ash ponds is more than one)* (a) Status: Under construction or Active or Exhausted or Reclaimed	Not Applicable

	(b) Date of start of ash disposal in ash pond (DD/MM/YYYY or MMYYYY): (c) Date of stoppage of ash disposal in ash pond after completing its capacity (DD/MM/YYYY or MM/YYYY): (Not applicable for active ash ponds) (c) area (hectares): (d) dyke height (m): (d) volume (m3): (e) quantity of ash disposed as on 31st March (Metric Tons): (f) available volume in percentage (per cent) and quantity of ash can be further disposed (Metric Tons): (g) expected life of ash pond (number of years and months): (e) co-ordinates (Lat and Long): (please specify minimum 4 co-ordinates) (f) type of lining carried in ash pond: HDPE lining or LDPE lining or clay lining or No lining g) mode of disposal: Dry disposal or wet slurry (in case of wet slurry please specify whether HCSD or MCSD or LCSD) (h) Ratio of ash: water in slurry mix (1:___): (i) Ash water recycling system (AWRS) installed and functioning: Yes or No (j) Quantity of wastewater from ash pond discharged into land or water body (m3): (k) Last date when the dyke stability study was conducted and name of the organisation who conducted the study: (l) Last date when the audit was conducted and name of the organisation who conducted the audit:	
19.	Quantity of legacy ash utilised (MTPA): i. Fly ash based products (bricks or blocks or tiles or	Not Applicable

	fibre cement sheets or pipes or boards or panels): ii. Cement manufacturing: iii. Ready mix concrete: iv. Ash and Geo-polymer based construction material: v. Manufacturing of sintered or cold bonded ash aggregate: vi. Construction of roads, road and flyover embankment: vii. Construction of dams: viii. Filling up of low lying area: ix. Filling of mine voids: x. Use in overburden dumps: xi. Agriculture: xii. Construction of shoreline protection structures in coastal districts; xiii. Export of ash to other countries. xiv. Others (please specify):	

20. Summary:

Details	Quantity generated (MTP)	Quantity utilised (MTP) and (per cent)	Balance quantity (MTP)
Current ash during reporting period	241758 MTPA	243076 MTPA 100 % Utilization	00 MT
Legacy ash	Not Applicable	No Applicable	Not Applicable
Total	241758 MTPA	243076 MTPA	00 MT

Note-
Difference in Generation and Utilisation quantity is due to moisture addition while filling the ash in the dumpers to avoid dusting.

21.	Any other information: Soft copy of the annual compliance report, and shape files of power plant and ash ponds may be e-mailed to:- moefcc-coalash@gov.in	
22.	Signature of Authorised Signatory	Head Environment